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CENSUS OF INDIA, 1921

VOLUME XVII

BARODA STATE

PART I

REPORT

BY

SATYAVRATA MUKERJEA, B.A. (Oxon),

SUPERINTENDENT OF CENSUS OPERATIONS,
BARODA STATE

BOMBAY:
PRINTED AT THE TIMES PRESS
1922.

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INTRODUCTION

1. Censuses—1872-1921—It was between the years 1867 and 1872 that the Government of India first essayed the task of a general census of this country. In that work this State was one of the few advanced Indian States that ventured to co-operate. A regular census was held throughout the State on the 21st February 1872. The preliminaries were undertaken independently by the State and the materials were afterwards tabulated partly in Bombay and partly in Baroda but no separate Census Report was written on that occasion. The second census was taken synchronously with the rest of India on the 17th February, 1881, and the whole operation from beginning to end including the writing of a Report, the first of its kind, was undertaken by the State authorities. Since that date, censuses are undertaken and organised by the State synchronously with the general Indian Census and its Reports have formed part of the all-India Series. The third census was taken on the 26th February, 1891, the fourth on the 1st of March, 1901, and the fifth on the 10th March, 1911. The present Census was held, as in the rest of India, on the night of the 18th March, 1921. The present Report is the fifth of its kind and forms Volume XVII of the Census of India Series.

2. Present Census Publications—The publications of the Census Department of this State consist, besides this Report, of two volumes of Tables in English and a Village Directory and a summary of the Report in Gujarati. The Imperial Tables Volume contains the standard statements prescribed for all India. The unit for these tables is the Administrative Division. At the end of that volume however two tables containing main statistics of population, density, variation, distribution by religion and number of literate persons for each taluka (Tahsil) are appended. The State Tables Volume contains the additional statistical matter collected specially by the State. These are either the results of special enquiries or further detailed figures per taluka regarding matters about which the Imperial Tables give information only by Divisions. This Report deals with the statistical material compiled in both these volumes but as the State Tables Volume has a more limited circulation than the other, an endeavour has been made to embody within the Report itself summary statements containing the general results of the special enquiries which the State has undertaken in this census.

3. Census Organisation and Officers—Besides the publications named above, the Census Department of the State is also responsible for another volume called the Census Administrative Report wherein a full account of the procedure adopted for the enumeration of the people and of the compilation of results has been given. It is not necessary therefore, nor is it of any interest to the general reader, to repeat in any detail the measures that were adopted. Besides, the procedure has now been so standardised that any reader who has been familiarised with Census literature does not require to be reminded of the main details of census operations. Mainly the routine followed in this census closely corresponded to that of 1911. As on the last occasion, an elaborate census agency consisting of District Census Officers, Charge Superintendents, Supervisors and Enumerators had to be appointed and trained. As soon as I was appointed to this office on the 1st of June, 1920, as the permanent Census Superintendent, the five District Subas (Collectors) were appointed District Census Officers for their respective charges and the Municipal Commissioner was given the work of organising the census of the City of Baroda as the City Census Officer. In this State as elsewhere the land-revenue and the police staff are the backbone of the census organisation. It is on them that the primary responsibility fell of preparing the ground for the census. The first work was to prepare a complete register of inhabited villages. In previous censuses there was much confusion between the Revenue and Census Lists of Villages. This confusion was mainly due to the laxity with which the term "Village" was interpreted. On this occasion it was decided to identify the village with the revenue Mauza. All hamlets formerly included within the village area and treated as part of it in village papers were merged in the parent village. After the list was prepared and passed the next duty of the Census Office was to divide the villages and towns into convenient blocks and circles. Generally it was the practice to group together 60 houses into a block normally

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under an enumerator. But this rule was relaxed if the supply of enumerators was inadequate. As the village was the unit of abstraction, care was taken not to include different villages in the same block. The blocks were so arranged as to be compact. From 10 to 15 of these blocks were constituted into a circle under a supervisor. Each Mahal was under a Charge Superintendent. Towns with Municipalities were put under a Charge Superintendent usually non-official who ran the census of his town under the general supervision of the taluka officer. The Inspecting Staff were the District and *Vibhag* (sub-division) census officers. There were altogether 96 Charge Superintendents, 1,206 Supervisors and 11,099 Enumerators in this census as against 92 Charge Superintendents, 1,273 Supervisors and 10,893 Enumerators in the preceding census. Preliminary conferences were first held in the head-quarters of all districts. Instructions were then orally given to Talatis and other Enumerators at almost every taluka headquarters town. To these were added written instructions. Manuals, standard lists of occupation, caste, language and birth place entries, lists of common errors to be avoided, explanatory circulars, inspection memos etc., were issued at all stages of the work. No stone was left unturned to obtain accuracy of record.

4. **House Numbering**—After the preliminary step of preparing the list of blocks and circles was over towards the end of the rains (from the 1st of October to 15th November, 1920), the first direct step towards the actual enumeration of the people was taken in the numbering of their houses, an operation which was carried out by the supervisors with the aid of their enumerators. Throughout the State with very minor exceptions, the social definition of a house was continued. In 1911, the old structural definition was given up and a new one defining a house as the residence of a commensal family was adopted. The few exceptions to this general definition were in regard to temples, *dharmashalas*, houses of Europeans and Anglo-Indians, etc., to which the structure rather than the family was the criterion applied. When the houses were finally numbered a block list (Form 8) showing per each block the census number of the house, the description of the house and the name of the head of each family was prepared.

5. **Special Inquiries**—Along with the work of house-numbering, it was decided to have a census of livestock per household and an inquiry into the size of house-room per standard of comfort. For this purpose, the block list was expanded with a perforated portion containing details for the classification of homesteads according as they are above comfort, in comfort or below comfort, and also columns showing kinds of livestock—agricultural and other kinds—and of ploughs, carts and carriages. In the City of Baroda under the auspices of this Census, a special Tenement Enquiry was undertaken by the Municipality.

6. **The work of Training**—After the houses have been numbered, an idea could be had of the exact number of census staff wanted. In this State both in 1911 and 1921, the preliminary work upto house numbering was done by the subordinate Revenue and Police establishments. It is only after this stage is reached that hands from the Educational and other departments are requisitioned and put under training for preliminary enumeration. These appointments are all made by the 1st December 1920. The preliminary enumeration did not begin till 1st February in villages and 15th February in towns. The intervening period was a very busy time with me, my Assistant and my office. The work of training the Census Staff and the distribution of forms throughout the State were our chief occupations. My Assistant and myself were travelling continuously throughout this period from August till March. Although the area of the State is small, we had to travel from Songadh to Beyt and from Patan to Billimora and thereby covered a country which is about as large as Bengal. Some idea also of the pressure on my small office of six clerks can be had from the number of forms that were printed and distributed. 4,000 copies of each leaflet, manual, instruction sheet and circular were sent out. Over 5,000 *parwanas* (permits) were issued to selected supervisors and enumerators for the special Sex Enquiry of which mention will be made presently. 12,000 copies of special explanatory circulars were also distributed. 295,000 enumeration schedules, 30,000 covers (containing instructions), 16,000 enumeration passes (of which 10,000 were bought from the Bombay Census Office), and 25,500 copies of Block lists were sent out from the Central Office. Ordinarily in other provinces this work is attended to by the Superintendent of Government Presses, or where there is decentralisation by the District Officers themselves. Here the entire work fell upon the small Central Office staff itself.

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7. **Preliminary Enumeration**—Part of the training consisted of the filling up by the enumerator on specimen schedules of sampled cases to get his hand in the work. The preliminary enumeration began in February. In the villages, where there is less fear of changes in the final record, it is spread over a longer period than in towns, where the movement is more frequent and the revisions are likely to be more numerous. This preliminary record was checked by the Supervisors, Charge Superintendents, District Census Officers and finally by me and my Assistant. In that month, we went for a third time round the State and between the two of us we covered nearly every taluka. We tested at least 10 per cent. of the books and at some places even 60 per cent. passed through our hands. A very thorough inspection of the City books was also completed by us during the first weeks of March. It may be here added that about this time, the enumerators were also instructed to enter the number of persons normally constituting a household.

8. **The Actual Census**—Finally the great night came, for which we had been making such strenuous preparations. In the vast majority of cases, the final census was only the process of going over the entries, striking out the departures and deaths and adding the names and other details of new arrivals. In towns where there are *dharmashalas*, hotels, hospitals and the like, the final census in many cases necessitated new work. Throughout the State except in certain forest and hilly areas, the census time was synchronous from 7 p.m. in the evening of the 18th March till midnight. But even in these non-synchronous areas, the final revision was commenced a few hours earlier. That was the only difference. Special arrangements were also made for railway stations, train enumerations, boats and floating population, *dharmashalas*, dak bungalows, etc. Throughout the night my Assistant, my staff and myself were at work in the City, inspecting and in helping the Ward Superintendents whenever required to prepare the provisional totals for the different wards of the City. Everywhere throughout the State there was feverish activity throughout the night to add up the various circle totals. The traditional rivalry of the Charge Superintendents about sending in their charge totals was in evidence in this census also. Various and elaborate were the devices resorted to by them in the attempt to be the first in the transmission of the great news. The first to send in his totals was the Range Forest Officer of Umarpada. The Padra Mahal Vahivatdar sent a messenger by road, who reached me at 4-30 on the morning of the 19th. The Vaghodia Vahivatdar used the telephone at Ajwa Water Works to transmit the news. The Bhadran Mahalkari arranged to send in his totals by wire and then followed it up with a messenger on camel-back. I am not quite sure whether the latter was not the swifter medium. One by one almost all the Charge Superintendents including the Mahalkari from far off Beyt sent in their totals in the course of the day. The few who remained sent their figures by the afternoon of the 20th and at 6 o'clock in the evening of that day exactly 36 hours after the census the provisional totals for the State were wired to the Census Commissioner for India. The Baroda City totals had been transmitted as early as 6 o'clock in the morning of the 19th. The accuracy with which these totals were rapidly compiled may be shewn by the fact that the difference between the provisional totals and the final figure arrived at after elaborate analysis in the Abstraction Office was only 4,647 or 0·2 per cent. Three district totals out of five differed from the final by only 19, or ·004 per cent. In the Baroda *Prant*, the difference of 1,340 or 0·2 per cent. was almost entirely owing to a mistake in posting in one taluka. In the Kadi *Prant*, the mistakes were more serious but were practically confined to three talukas out of the twelve. The difference there amounted to 3,356 or nearly 0·4 per cent.

9. **Abstraction and Tabulation**—Within a week of the Census, all the enumeration books were sent to the Central Office, and an Abstraction Branch was opened under the direct supervision of my Assistant to turn this " raw material " into the " manufactured product " of the Census Tables. This process is of a three-fold nature : slip copying, sorting and compilation of results. The experience of the last two censuses has demonstrated the superiority under Indian conditions of the slip system over any other conceivable alternative. The Slip system is simply the process of abstracting from the enumeration books all the information entered regarding each individual person (except his or her name) on a convenient sized slip. Slips of different colours were used for each religion returned (red for Hindu, yellow for Jain, blue for Animist, green for Musalman, white for Parsi, brown for Christian and *badami* for other religions). Symbols to distinguish civil condition for each sex were printed on the slips. Thus for

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writing the other entries it was necessary for the slip copyists to select the right coloured slip with right symbol printed on it. As to the other entries, a standard list of abbreviations was prescribed. After the entries in each block were thus abstracted, the slips were counted and sorted by religion, and the details were entered in an important register called Register A. This work began on the 25th March, lasting, allowing for holidays and half working days, altogether 34 days. We were able to report the final totals, the first of all States and Provinces, to the Census Commissioner for India on the 10th May. The next process was that of sorting which was started soon after and lasted till the 10th September 1921. Sorting was only a process of preliminary compilation. There was a sorter's ticket to each final table. Each sorter was responsible for a certain number of slips which were handled separately by religion and sex. Further the slips for the towns were kept distinct throughout from those of the villages. After he had counted the slips in his charge, he sorted his slips according to the requirements of each table and posted the results per religion and sex on the sorter's tickets. Along with the standard statements prescribed for all India we undertook to do special sorting in certain matters concerning literacy, birthplace, infirmities, occupations and civil condition. Besides these, the results of the special enquiries referred to above had to be collated and reduced to tabular form.

The last stage, *i.e.*, that of compilation, began early in June, as soon as the sorters had prepared a sufficient amount of material for compiling the tables. The first six tables were readily compiled from Register A. Compilation really began with Table VII and consisted in reducing the mass of details in the sorters' tickets into Compilation Registers by talukas which were further reduced into Imperial and State Tables. Some tables, *e.g.*, regarding Age, Birthplace and Occupations gave the most trouble, but all difficulties were at length countered. The compilation for Imperial Tables was over by the 15th December 1921.

10. New Enquiries—Altogether 22 Imperial Tables and 38 State Tables were compiled in this census. Of the State Tables, eight are incorporated in this Report (Chap. VI, Part II), 29 are contained in the State Tables Volume and one—Distribution of caste by talukas—is ready only in manuscript. Of these State Tables, those which are wholly new to this Census number 28. The nature of new enquiries undertaken along with the general census has been already described. No less than twenty new tables were based on these. One other enquiry remains to be mentioned. It was decided at my instance to compile for this Census, statistics of Marriage and Fertility in the State. A special enquiry was conducted in this respect—but on an optional basis—by a selected staff of men and women workers. Eight tables containing its results are incorporated in the Report. The subject matter of these twenty-eight new tables is detailed in the margin.

Subject matter	Number of Table	
	State	Subsidiary
1. The Census of Live-stock ..	XXVI-XXVII	
2. The Size of the Normal Family.	XXVIII	
3. Classification of Homesteads by Standards of Comfort in talukas and towns.	XVII-XVIII	
4. The Tenement Census Enquiry in the City of Baroda.	XIX-XXIII	
5. Additional data regarding Occupation:		
(a) occupation of English literates.	XIII	
(b) the occupation of the urban population and	XXIV	
(c) occupation of immigrants to the City.	XXV	
6. Additional information regarding Literacy:		
(a) literacy in towns	X	
(b) literacy by scripts	XI	
(c) statistics regarding those who though not literate are able to read only.	XII	
7. Additional and detailed information regarding Age, Sex and Civil Condition in towns and talukas	VI-VII	
8. Additional information regarding Age-distribution of migrants.	XV-XVI	
9. Additional information regarding Civil Condition of the Infirm.	XIV	
10. Enquiry regarding Size and Sex Constitution of families.		I-VIII (ChapterVI Part II)
11. Statistics regarding Cottage and Rural industries.	XXIX	

11. The Report—Early in the sorting stage, I lost the valuable aid of my Assistant whose hard work in connection with the preliminaries to the Census brought on a serious illness. From May till the end of the compilation of tables, I had to attend to the scrutiny and supervision of the Tabulation Office. This

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entailed a very serious strain upon me and although the collection of other statistical materials and notes for the Report was going on apace, the actual writing of it could not be taken in hand till the first week of November. In view of the greater statistical interest of this Census, compared to other years, a mass of miscellaneous information of economic interest had to be collected and analysed. Besides the 51 tables published in the two Tables Volumes, this Report contains 101. Subsidiary Tables and innumerable marginal statements which help the reader to understand the figures better. Every effort has been made to ensure accuracy and enable this Report to become—as its ambition is to be—a reliable work of reference.

I make no apology for its bulk. As Mr. (now Sir Edward) Gait pointed out in the Bengal Census Report of 1901,—" Completeness is more important than brevity, especially in India, where there is no body of professional statisticians ready and eager to pounce on the raw material provided for them at the Census and to make the required deductions; and, unless the Census Superintendent himself analyses the figures and points to the conclusions to be drawn from them, they are in danger of being left unnoticed altogether." I have always thought that the Census was an excellent agency, with whose aid any amount of valuable and important information could be collected, provided no undue strain was put on its intelligence. I have therefore endeavoured to place before the reader a volume of statistical material, the extent of which has not been equalled by any other Census in this State. I present the results to the reader's judgment. Finally I have pleasure in stating that the value of this Report has been much enhanced by the excellent actuarial analysis (Part II-of Chaper V) which Prof. Vaidyanathan has contributed on the Age figures. A Life Table for this State was long felt to be a great want. I am hoping that Prof. Vaidyanathan's work will be found very useful. He has also written one of the appendices *viz* :—the centre point of population.

12. Cost of the Census—A few details of the cost of the census may not be uninteresting. The final accounts are not yet made up, so that some of the items herein included are estimates. When the bills for the printing of the Report are paid an expenditure of nearly Rs. 1,12,500 will have been incurred, or a little less than double of the figure of the last census. The very great increase in the cost of printing and paper, the rise in the scale of wages and the increased volume of statistical work that we undertook to do in this census at once suggest themselves as causes of this circumstance. Where my predecessor could get slip copyists and sorters for Rs. 12 and Rs. 15 I had to offer Rs. 25 and Rs. 35. The cost of printing and paper now is more than double. Compared to 1901, however, when the cost of the census was Rs. 1,25,000, our expenditure is less. The Census of 1921 has cost Rs. 53 per 1,000 of the population, as against Rs. 28-8 as. in 1911 and Rs. 64 in 1901.

Items of expenditure	Expenditure in Rupees	
	1911	1921
Establishment and Allowances	41,702	72,500
Contingent and Printing Charges	15,425	37,960
Deadstock	2,646	4,587
Total ..	59,773	115,047
Less Recoveries	1,773	2,662
Net Expenditure ..	58,000	112,385

13. Acknowledgments—The essential requisites of a successful census are finance, guidance and co-operation. In presenting this Report I must therefore express my cordial indebtedness to His Highness's Government, for lending a ready ear to all my requisitions. Altogether since April, 1920, sums amounting to Rs. 1,52,000 were set apart in the budget for Census work, and in this respect, I appreciate very much the complete confidence which the Government of the State thought fit to repose in me. To Mr. J. T. Marten, the Census Commissioner, I have to express my especial obligations. He has done this State the compliment of visiting it twice, which, if I remember rightly, no other Census Commissioner had done. His talks with me on a variety of subjects and in particular in regard to the Statistics of Marriage in which I happen to be specially interested, have formed the basis of many a paragraph in this Report. To his notes and circulars and also his own Report on the Central Provinces Census of 1911, I am thankful for many helpful suggestions in statistical analysis. To the Dewan of the State, Sir Manubhai Mehta, Kt., C.S.I., I owe more than I can acknowledge in the way of helpful advice. The forms of the eight Sex Tables were submitted to him and their present shape is almost entirely due to his suggestions.

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He has looked through the Chapter on Language which bears the seal of his approval. In Chapters on Literacy and Civil Condition I frequently sought his advice. Of the others, the foremost are my distinguished predecessors, Khan Bahadur Dalal, to whom every writer on the Baroda Census must look back as to a master, and Rao Bahadur Govindbhai, whose remarkable neatness and lucidity of treatment of figures I took as my model. Their Reports have been my constant companions in the last two years, and my indebtedness to them for much valuable knowledge has lain rather heavily on my conscience. Of the other officers, Mr. A. B. Clarke, Educational Commissioner, Dr. C. V. Sane, Director of Agriculture and Mr. Manilal B. Nanavati, Director of Commerce, co-operated with me very cordially, and made available to me and my staff all the materials at their disposal. To the India Reports of 1901 and 1911, Mr. Blunt's Report on the United Provinces, Pandit Harikishan Kaul's on the Punjab, Mr. O'Malley's on Bengal and Mr. Morgan Webb's on Burma, my gratitude is due for valuable suggestions and new ways of statistical analysis. A writer on the Census—particularly in this year of grace—cannot hope to produce an original Report, and I am not sure whether the reader is not thankful for this circumstance. This Report has sought its inspiration from a variety of sources. I have tried however to acknowledge my borrowings always in the body of the Report. But I should like here to add the names of the following authorities: Dr. Radhakamal Mookerjee's *Foundations of Indian Economics*; Dr. Farquhar's *Modern Religious Movements in India*; Mr. R. N. Gilchrist's *Indian Nationality*; Prof. Ramaprasad Chanda's *Indo-Aryan Races*; the Baroda Economic Development Report and lastly my friend Mr. Piyare Kishan Wattal's *Population Problem in India* which was recommended to me by the Census Commissioner as one of the best statistical studies on the Census that he had read. Mr. N. D. Mehta, B. A., LL. B., Chief Officer of Ahmedabad Municipality, kindly acceded to my request for a note on an interesting Baroda religious movement, which I have published as an Appendix to this Report. Prof. A. G. Widgery, M. A. (Cantab.) and Mr. D. L. Purohit, M. A., LL. B. were very helpful with their suggestions.

Turning nearer home, I have to acknowledge my obligations to the office. No one could wish for a more devoted staff. Mr. Maganlal N. Thakkar, B. A., LL B., who was Head Clerk and Personal Assistant in the last Census, worked in this, as Assistant Census Superintendent. His intimate local knowledge and experience of the *minutiæ* of census were invaluable assets to me when I took over charge. His constant travel and heavy work told upon his not very strong constitution; and from May 1921 till November 7 of the same year, when he left me, he was ill practically for the whole period. But still even in his illness he never denied me such assistance he could; after he left me he has kindly read for me some of my chapters before finally passing them for the Press. Mr. Anant N. Dikshit, B.A. (Honours), worked as my Head Supervisor and then acted for Mr. Maganlal during his periods of absence on leave. He had to bear the brunt of the very heavy work of supervision and even of organisation. Later from November till end of March he worked as my Personal Assistant. In these capacities I have pleasure in bearing testimony to his signal devotion to work. Mr. Natwarlal M. Parikh, B.A., deserves special commendation for the painstaking accuracy with which he prepared the Subsidiary Tables. Mr. Jhaverbhai T. Patel, B.A., my Head Clerk, has a good command of English, which made him a useful literary *amanuensis*. Mr. Dahyabhai Harjiwandas Shah was my Shirestedar, and one of the most efficient clerical hands that I have ever come across. He had charge of the entire spade work of the preliminaries of the Census. Without any previous experience of this kind of work, he yet attained a singular mastery of its detail. Mr. Chunibhai Jamdar, the Map Drawer, has an excellent hand, and managed to complete his work in spite of a very severe illness. Finally the Typist, Mr. Ashabhai S. Patel, must not be forgotten—one of the best workers in his line. His gifts of rapid work were sometimes embarassing to me, for his speed was faster than my thoughts.

Lastly, but no less sincerely, my gratitude is for the *Times of India* Press. I do not know which to be grateful for the most—the excellence of the work they turned out or the astonishing patience with which they bore with my many unreasonable requests. The Laxmi Electric Press was responsible for the State Tables Volume, the style and get up of which are a credit to local printing enterprise.

SATYA V. MUKERJEA,
Census Superintendent, Baroda State.

BARODA, *2nd June* 1922.

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REPORT

ON THE

CENSUS OF BARODA

1921

CHAPTER I

DISTRIBUTION AND MOVEMENT OF THE POPULATION

STATISTICAL DATA

Subject	TABLES		
	Imperial	State	Subsidiary
Area, Houses and Population by Divisions	I	..	..
Area, Houses and Population by Talukas with densities.	..	I	..
Density, Water-Supply, and Crops	..	..	I
Distribution of the Population classified by Densities ..	..	..	II
Variation in Population by Divisions since 1872 ..	II	..	..
Variation in Population by Mahals since 1881	..	II	..
Variation in relation to density	..	..	III
Variation in Natural Population	..	..	IV
Comparison with Vital Statistics	..	..	V
Variation by Talukas classified according to density ..	..	..	VI
Persons per House and Houses per square mile ..	..	..	VII
Classification of Homesteads by Talukas	..	XVII	..

PART I

Distribution of the Population

1. **Introductory**—The territories of the Indian State of Baroda cover an area of 8,127 square miles. Although in extent, the State covers only about one-eighth of the Natural Division of Gujarat, its administrative divisions are spread over the whole of the region and are so situated that each shares the special characteristics of that part of Gujarat to which it belongs. Its three *prants* (or divisions) of Kadi, Baroda and Navsari belong respectively to North, Central and South Gujarat; while Amreli and Okhamandal Divisions belong to Kathiawad. Their physical features, rainfall, climate, variations in soil, productive capacity and the like, and the characteristics and aptitudes of their inhabitants are very similar to the conditions existing in the contiguous areas in the Bombay Presidency. Not one of the administrative divisions of the State is adjacent to one another; and while Baroda and Kadi Divisions are more or less compact blocks of country, Amreli is riddled with foreign territory; Navsari is cut almost into two unequal halves by the Mandvi, Bardoli, Jalalpur and Chikhli Talukas of the British district of Surat; and at the far end of Kathiawad, isolated from the rest of the State, is the little taluka of Okhamandal, now constituted into a separate administrative unit. It is important to remember that the scattered character of the State is the result of historical circumstances connected with the successive partitions of Gujarat which began as early as 1751 with the wars between the Gaekwad and the Peshwa, and were governed solely by fiscal aims and dynastic ambitions. Little regard was paid, in the sharing of the spoils, to considerations of communal homogeneity or

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to the administrative advantages of a compact territory. One of the consequences that have flowed from this circumstance is important for our statistical survey of the population. The divisions are isolated from one another and, beyond the tie of a common government, have little intercourse with one another. Navsari, for instance, has more to do with Surat; its markets, its produce, its labour, its social exchanges, its inter-migration are almost exclusively with the neighbouring British districts of Surat and Khandesh, rather than with the other divisions of the Raj. Similarly Baroda has more to do with Kaira, Broach and the adjoining Indian States, and Kadi with Ahmedabad, Palanpur Agency and Kathiawad generally, than with each other or with Navsari and Amreli; while the last named *prant*, situated in the heart of Kathiawad, has few traces of the other parts of the State to show in the composition of its people besides the imported official class and their families.

2. **The Boundaries**—Roughly speaking these territories lie between 20°-45′ and 24°-9′ N and 70°-42′ and 73°-59′ E with the exception of Okhamandal which lies between 22°-5′ and 22°-35′ N and 69°-5′ and 69°-20′ E. Within these wide limits, it is but natural that great diversities in scenery, physical configuration, climate, etc., are observable in this State. In four out of its forty talukas, it touches the sea. Its Navsari *Prant* has the most varied scenery comprising within its area of 1807 square miles a sea-coast, large rivers, plains, forests and hills. Its Kadi and Baroda *Prants* are mostly level country consisting of sloping river-valleys and undulating plains with occasional hills and ridges of blown sand which relieve the monotony of the flat surface. In the East and South-East of Navsari and towards the Gir in the South-West of Amreli, the cultivated plain gives place to the forest and rises into uplands and even high hills.

3. **The Natural Divisions**—We shall attempt a closer analysis of these differences when we come to the question of density; but it is sufficient here to remark that these differences justify the continuation of the scheme of Natural Divisions adopted by Rao Bahadur Govindbhai Desai in the Census Report of 1911. Census Statistics are presented in two ways: in the Imperial Tables, the absolute figures are given as compiled from the Census Schedules according to administrative divisions. In the Subsidiary Tables these figures are generally reduced to proportions for facility of study and distributed according to divisions into which the administrative units may naturally group themselves according to their physical and racial affinities. In the different parts of India it happens that administrative convenience and physical considerations have not coincided and thus the absolute figures given in the Imperial Tables are redistributed according to the Natural Divisions in the body of the Report. Such a readjustment has been rendered necessary this time in the case of Amreli and Okhamandal, which, though now separate administrative divisions belong to Kathiawad and may be taken as one Natural Division. In regard to the other three *prants*, such a regrouping will not however be necessary, as they constitute for the reasons stated in the introductory paragraph separate Natural Divisions by themselves. So the four Natural Divisions of 1911 have been continued in this Report also, with this innovation that in order to direct our attention more exclusively to the physical aspect of the statistics, they have been called by their geographical instead of their administrative names in the Subsidiary Tables.

4. **The Administrative Divisions**—The State consists of four Divisional Collectorates (or Subaships) of Baroda, Kadi, Amreli and Navsari and the special commissionership of Okhamandal. The last named taluka was under the jurisdiction of the Suba of Amreli in the Census of 1911 and continued to be so under until February, 1920, when the complete rendition of control over the Waghers to the Government of the State was agreed to by the Government of India. In 1861, after the suppression of the Wagher rising with the aid of the British subsidiary force, His Highness the late Maharaja Khanderao agreed to entrust his civil and criminal authority over these turbulent and piratical people to a British Officer subordinate to the Resident at Baroda and to organise a Regiment under the command of that officer for the policing of these people. The jurisdiction over the non-Wagher population continued however with the authorities of the State. During this period of dual control, the revenue jurisdiction of the taluka was under the Suba of Amreli. An enlightened policy of conciliation, under which the Waghers were given a privileged tenure, generous advances of money to till their lands and liberal facilities of education, led to the question of complete rendition of control over these people. A small advance in this direction was registered in

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1909, when the State Magisterial authorities were given second class criminal powers over the Waghers. In 1920, the full control was restored to the State: the British political officer stationed at Dwarka was withdrawn; and, as the head-quarters at Amreli were considered far away and the taluka required to be governed on different lines from the settled parts of the State, it was constituted into a separate *prant* under a Commissioner with special powers analogous to those exercised by the executive head of a non-regulation district in British India. This is the only administrative change in the number and constitution of the divisions in the decade. The taluka of Velachha was amalgamated in 1916 with the Peta Mahals of Vakal and Umarpada and renamed Mangrol. Excepting transfers of villages from one taluka to another, there have been no other changes to record.

5. Average area of Divisions—If we exclude Okhamandal, the circumstances of whose separation from Amreli are exceptional and perhaps temporary, the average area of a Baroda *Prant* (corresponding to a British Indian District) comes to 1,963 square miles. Including Okhamandal, the average area per *prant* is reduced to 1,625 square miles. Certain figures showing the average area of districts in selected British Indian Provinces and States are given in the margin for purposes of comparison. It will be seen that the size of a normal division in this State is smaller than the size of a district in any of the British Provinces or States taken for comparison, with the exception of Travancore. There is, however, great correspondence in the size of our *prants* with the British districts of Gujarat with which they are closely interlaced. Kadi *Prant* with 3,046 square miles corresponds to Ahmedabad with 3,824 square miles, Baroda (1922) may be compared with Kaira, (1596), Broach (1468) and Panch Mahals (1606); Navsari (1807) corresponds to Surat (1651). In fact, if we exclude Thana from the Northern Division the average area of a Gujarat mainland district comes to 2,029 in Bombay and 2,258 in Baroda State. The proportion is reduced for the whole State, of course, by the partition of the old Amreli *Prant*. The districts in Bengal and the United Provinces, it may be added, correspond also very closely to the Gujarat districts in our State in size. These five *prants* are further subdivided into forty mahals and peta-mahals. Excepting Beyt, which is a little island in the Gulf of Cutch, and Bhimkatta which is an isolated village with a little cultivated land around it to the north of Kathiawad, the size of a normal taluka in the State comes to 213 square miles. In Kadi, the largest district, the size of an average taluka is also the largest (253 square miles). In Navsari, the average is 250 square miles. In Baroda it is 173 square miles. In Kathiawad, the size of talukas is smaller being on an average 152 square miles.

Province or State	Average area per district
Bombay	4,745
Northern Division ..	2,263
United Provinces ..	2,234
The Panjab	3,326
Bengal	2,860
Central Provinces ..	4,537
Hyderabad State ..	4,864
Mysore State	3,684
Travancore State ..	1,520
Baroda State	
incl. Okhamandal ..	*1,625*
excl. ,, ..	*1,963*

6. The Area dealt with—The area of the State as disclosed by the latest figures furnished by the Survey Department comes to 8,127 square miles, distributed as in the margin by administrative divisions. In extent the territories of His Highness the Maharaja have remained unaltered since 1911, except for petty rectifications in the frontier line which have had no effect on the population. Within this area is included one square mile for the Camp near the City of Baroda, which is under British jurisdiction. The area was shown in the Report of 1911 to be 8,182 square miles. In 1901, the figure was 8,099. In 1891, the area was given out as 8,226. In the previous Census of 1881, it rose even higher to 8,570; and as if this was not enough statistical caprice, the Census of 1872 stated the area of the State to be only 4,399 square miles.

Division	Area
Baroda incl. City	1,922
Kadi	3,046
Navsari	1,807
Amreli	1,077
Okhamandal	275
Total ..	8,127

7. Changes in Area explained—It is not possible to explain the vagaries of all the previous Censuses, but since 1911 the changes in area are due to two main causes. Certain areas, which had hitherto been unsurveyed, were either estimated or even omitted from the total area in 1911. Such was the case for instance with the great reserved forest areas in Vajpur (under Songadh) and of Um-

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arpada (under Mangrol); the Vajpur forest area was not surveyed till 1914, but was estimated in 1911 and in previous Censuses at 460 square miles. The greater portion of it (estimated at 438 square miles) was included under Songadh and the remaining part known as Umarpada (with an estimated area of 22 square miles) was transferred to Velachha as a separate peta mahal. In 1914, these areas were traversed for the first time and the results are shown in the margin. Thus the net loss in area of the Navsari Division from this cause amounts to 52 square miles. The alienated villages, and the disputed *wanta* lands in certain parts of the State were also brought under survey during the decade, and resulted in slight changes in area, mostly in the Kadi Division. Another cause of change is to be found in the additions to the area resulting from the settlement of *takrari* lands (or lands which were in dispute between alienated and Sarkari villages in the taluka itself). These disputed areas were not measured at all in the original settlement and it was only when the revision took place that they were apportioned between the respective villages and measured. In such manner, Baroda *Prant* (in Savli and Baroda talukas) gains in area to the extent of 22 square miles. The settlement of boundary disputes with the British Government and other Indian States has led to very inconsiderable gains in area without any effect on the population. In regard to boundary disputes with British territory, we have to record the formal cession of Wadi Salher to this State in 1918 by the Bombay Government. The status of this hill-fort was a matter of protracted controversy between this State and the Government of Bombay since 1898. This hill-fort has however been all along under the occupation of the Baroda State authorities and has been censused by this State since 1872; so, when in 1918, the Government of India decided that the village should be regarded as within Baroda territory under the sole jurisdiction of His Highness, this formal transfer did not effect any change either in area or population. The Pashu islets in the Gulf of Cutch, near the island of Beyt, were another matter of long continued dispute between the Jamnagar Darbar and this State. These islets are eight in number, and with one exception, all are submerged—visible only in low water and therefore uninhabitable. They formed part of the Poshitra Estate and were included in Okhamandal, when it was ceded in full sovereignty to this State under the Definitive Treaty of 1817. In 1907, the Jamnagar Darbar however raised a question about their jurisdiction. By the award of Special Commissioners appointed for this purpose, given in 1912 and later confirmed in appeal by the Commissioner, Northern Division, in January 1914, seven of these islets, including the habitable island, Manmarodi, were declared to belong to this State. These islets have gained for the State 659 bighas or nearly one square mile in area. Apart from boundary disputes and measurement of unsurveyed areas, there have been mistakes in the posting of figures apparently for the areas of Songadh proper and of Kodinar. The area of Songadh (without Vajpur) was shown in 1911 as 344 square miles, while the true area is only 288; this fact coupled with the corrected figure for the forest reserves accounts for a net loss of 108 square miles in the area of Navsari Division. The area of Kodinar in Amreli *Prant* is 207 square miles instead of 201 as shewn before. In the Kadi *Prant*, the increase in area is made up mainly of 17 square miles gained in Vijapur, and 3 in Mehsana, by the measurement of *Vanta* lands and unsurveyed alienated villages. The remaining discrepancies in the areas of division are due to mistakes in measurements discovered at the revision settlements of talukas. The effect of inter-taluka transfers of villages has been calculated on the areas, as well as the populations, of the Mahals, particularly in Baroda, Waghodia and Savli Mahals in Baroda *Prant* and Vijapur, Mehsana, Patan, Sidhpur, Chanasma and Harij Talukas in Kadi. The true area of the State by divisions is shewn in the margin as compared with the figures given in 1911. The point about the change in area may seem to have been laboured to an unjustifiable length, but, as the whole of the State has now been surveyed and it is anticipated that in succeeding Censuses, no large divergences from the area now given will be disclosed, doubts regarding the areas of certain tracts should be definitely laid at rest.

Portion belonging to Songadh	.. 290 sq. miles.
Portion belonging to Mangrol	.. 118 sq. miles.

Divisions	Area shewn in 1911	Area shewn in 1921	Variation
Baroda Dn...	1,898	1,922	+ 24
Kadi „ ..	3,023	3,046	+ 23
Navsari „ ..	1,914	1,807	—107
Amreli „ ..	1,072	1,077	+ 5
Okhamandal...	275	275	..
Total ..	8,182	8,127	—55

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8. Scope of the Chapter—These introductory paragraphs have been written with the intention of supplying a frame work for the discussions with which this opening chapter is concerned. Its scope is sufficiently indicated by the statistical data with which it is headed. Any statistical review of the population must start naturally with what may be called its static aspects, namely, the distribution of the people at some given moment, such as disclosed by the results of a synchronous Census, and the extent to which the factors of social aggregation have operated in favour of settlement in certain areas and adversely in others. After these aspects are referred to, the changes in the population as disclosed by successive Censuses will be considered with particular reference to the physical and economic conditions in the preceding decade ; and also how far such changes are due to a real movement of the population and the causes that have operated in regard thereto. The general question of the balance of migration affecting variation will have to be referred to although its consideration in detail must be reserved till Chapter III. The question of vital occurrences and their effect on the survival rate, and of the age-constitution of the people, as disclosed from decade to decade,—a detailed consideration of which belongs to the Chapter on Age,—must be also discussed in general, and the main results will have to be stated to facilitate the study of the changes in the character of the populations from Census to Census, how far they have been progressive, and whether such progress has been maintained by the natural increase of births over deaths or by the incoming of settlers from the outside. From these considerations of the past, the Chapter will proceed to discuss the problem of future expansion ; and in that respect an attempt will be made to consider the extent to which present density corresponds to real pressure of the population on means of subsistence ; and whether in view of such pressure, agriculture will tend in the coming years to give place to industrialisation. In Appendix I attached at the end of this Volume, my colleague, Prof. L. S. Vaidyanathan, M.A., A.I.A., will test the movement of population in the decade by finding out the centre points of population in Baroda and Kadi *Prants* in the Censuses of 1911 and 1921. In the course of the discussion in this chapter, as also in other chapters of the volume, minor marginal tables will be given to elucidate the facts presented in the text, so that constant references to the Tables Volumes will be avoided but care will be taken that a mere repetition of figures otherwise easily accessible does not cumber the body of the Report.

9. Population—The Statistics regarding Area, Houses and Population are given in the Imperial Table I by Divisions and State Table I by Talukas. The Census taken throughout the State on the night of the 18th March 1921 revealed a population of 2,126,522 persons, distributed as in the margin per each natural division. This population is roughly about one-ninth of the population of the British districts of the Bombay Presidency. Although in area this State is only about 1 per cent. of the total extent of Indian States, it has proportionately to its size a much larger population. At least 16 other Indian States are known to exceed it in area, but in population only six other States * in India are more important. Hyderabad has over ten times its area, but only about six times its population. Kashmir is also of the same extent as Hyderabad, but its inhabitants number only about a million more than this State. Mysore and Gwalior are each three times larger in area ; but the populations of these States are much less in proportion. Jaipur is nearly double in extent, but its population only just exceeds that of Baroda. Travancore alone of the States that are higher in population has a slightly smaller area than Baroda.

Natural Division	Population
Central Gujarat (including City) ..	707,512
North Gujarat ..	900,578
South Gujarat ..	340,372
Kathiawad	178,060
Total State ..	2,126,522

*Hyderabad.
Mysore.
Travancore.
Kashmir.
Gwalior.
Jaipur.

10. Relation of Area and Population—From the marginal table above it will be seen how the population is distributed in the four natural divisions. North Gujarat (or Kadi) has 42·4 per cent. of the population ; Central Gujarat with the Capital in its centre comes next with 33·4 per cent. of the total population. The other two divisions of South Gujarat and Kathiawad come next respectively with 16 and 8·2. A diagram is given below showing the relation between area and population of the five administrative divisions. Each white pearl represents 1 per cent. of the total area, and a black pearl similarly shows 1 per cent. of the total popula-

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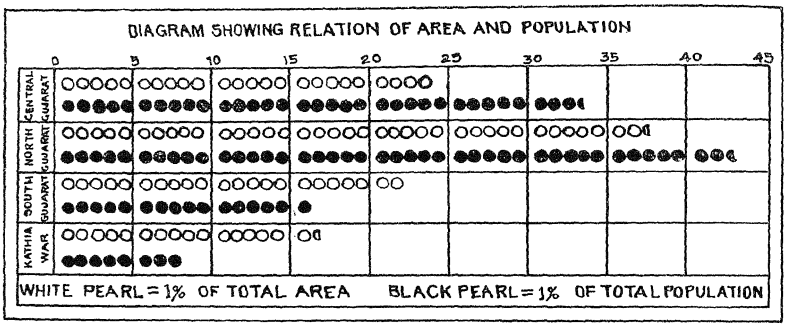
tion. It will be seen therefrom that roughly three-fifths of the total extent of the State bears three-fourths of the total population, while the remaining two-fifths, containing large forest areas, supports a fourth of the population.



11. The Meaning of Population—Accuracy of the Enumeration. Before we come to a closer analysis of the figures, it is necessary to ascertain what this population means. About a month previous to the Census date, as is pointed out in the Introduction to this Report, a preliminary record is prepared throughout the State of all the inhabitants, which is tested and corrected finally on the Census day. Births and deaths as also departures and arrivals on or before the Census date are of course adjusted. The question that is asked of the people is not whether any one is normally resident within the area, but whether he is actually so resident on the day, or rather the night of the Census. A synchronous Census taken within a specified time limit throughout the State has therefore no necessary reference to the normally resident population. The Preliminary Record may perhaps give a truer picture of the normal population, as it concerns itself mainly with the families normally residing in their houses, all Census of dharmashalas, hotels, hospitals, railway stations, and such other places where there is a perpetually moving population, being reserved for the final Census date. In this State, as in previous Censuses, the population was throughout counted, there being nowhere any estimate of the population. The Census was also for the most part synchronous being taken from 6 o'clock in the evening of the 18th till the midnight of the same date. In certain big Railway Centres, like the Baroda Railway Station, the time for platform enumerations was extended up to 6 o'clock in the morning of the 19th March. In certain other areas, mostly forest regions and sub-montane tracts owing to the difficulties of a night-enumeration a day Census was provided from 4 o'clock till after sun down and the people were enjoined not to go into synchronous areas. These areas were the forest areas of Songadh and Vyara, the Umarpada Peta Mahal of Mangrol, the Anaval tappa of Mahuva taluka, (all in Navsari *Prant*), and the Amroli tappa in Tilakwada peta mahal in Baroda Division. But these non-synchronous tracts did not have any disturbing effect on the general accuracy of the figures. As they are, even at day-time, isolated areas, after sunset there could not have been any movement of population from these to the synchronous areas on the Census night. To secure accuracy of enumeration it was provided throughout the State, that the preliminary record should be revised at day time on the 18th March before the final revision should take place between 6 p.m. and the mid-night of that day. As compared with 1911, it may be stated generally that the Census conditions were more propitious in this year. Plague which was raging about the time in 1911 in the three *prants* of Baroda, Kadi and Navsari caused a little inconvenience. In Dabhoi town, for instance, a great part of the inhabitants remained in Kutcha tenements away from the town-site, and consequently the population showed a large decrease from the figures of 1901. In these plague infected areas, the synchronous principle must have been to a great extent abandoned. In 1921, fortunately, no such untoward event happened to disturb the operations. It is true that the Census date happened to be a market day for the City of Baroda, where usually a great many people foregather from the surrounding villages. But all these return long before the evening to their homes, and there is no reason to suspect that the fact of the Census date being a market day had any

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effect on the City's figures. As a matter of fact, the City Census was most thoroughly inspected by the Census Staff ; and the usual public complaints of people being omitted, which follow in the wake of all Censuses, were happily conspicuous by their absence on this occasion.

12. An Estimate of Normal Population—The population then as disclosed on the night of the 18th March 1921 was the *de facto* population. It is the resident or *de jure* population of the State, normally inhabiting these territories, plus those who are temporary sojourners in their midst and less those out of the normal population who may have temporarily gone abroad. The Census Schedule gives details of birthplaces of inhabitants but does not give any clue as to their normal residence. One indication is roughly given by the separation of figures for Railway platform enumeration and for boats arriving at ports from the general totals. In the Tables, these figures are added to the totals for the respective areas in which the Railway Stations are situated. This is not strictly accurate, but as the figures are small, no large error is involved. The total number of persons so enumerated in Railway platforms and trains and in boats arriving at ports of the State is only 2,783 (2,233 males, 550 females) distributed in the natural divisions as in the margin. The comparative paucity of figures for Kathiawad is due to the smallness of its Railway mileage. But these figures only refer to the movements on the Census date ; they are no indication of the actual normal population of the State. An attempt was made in this Census to estimate this from the preliminary record which as above hinted, does make a closer approximation to the normal state of things.

Natural Division	Railway and Boat Population		
	Males	Females	Total
The City	707	148	855
Central Gujarat ..	613	175	788
North Gujarat ..	440	173	613
South Gujarat ..	389	33	422
Kathiawad	84	21	105
Total State ..	2,233	550	2,783

Along with the Preliminary Census an additional enquiry was conducted into the number of persons per inhabited "house" which in this Census as in the last was defined to be "the residence of a commensal family." An inhabited house was therefore taken to be identical with a family. Care was taken in regard to this enquiry to exclude from the calculation all casual visitors and servants. Inmates of asylums, hospitals and jails, and the residents of dharmashalas, hotels, vishis, dak bungalows and other places of temporary residence were excluded from this calculation, so that an idea could be obtained of the size of the normal family and also roughly of the normal population. The question of the size of the family may be deferred till we come to the question of comparative fertility and the sex constitution of families which will be discussed in Part II of Chapter VI. But we shall now see how far this enquiry throws any light on the extent of the normally resident population in the State. Of course the work was not very accurately done. The instructions were not precisely followed. The mistakes were numerous ; at some places casual visitors were without inquiry reckoned in the number ; even servants were also sometimes counted ; at other places the totals were not even entered. These mistakes were as far as possible carefully eliminated by reference to the entries in the books. It cannot be said however that all of them have been so eliminated. Under the circumstances the following results can only be given as a tentative contribution to the problem :—

Natural Division	Census Population	Estimated number of Normal families	Estimate of Normally resident population	Normal population per 1,000 of Census population
Baroda City ..	94,712	25,776	88,625	936
Central Gujarat ..	612,800	151,501	595,428	972
North Gujarat ..	900,578	219,342	863,823	959
South Gujarat ..	340,372	68,317	330,178	970
Kathiawad ..	178,060	38,896	173,615	975
Total State ..	2,126,522	503,832	2,051,669	965

From the above Table it appears that the final Census totals make the nearest approach to the estimate of normal population in Kathiawad, where the railway communications are the least numerous, and the people are the least mobile ; while in the City the disturbing influences are the greatest, and the population at the Census date is larger by over 6,000 than the estimated normal population of that City. No comparisons with 1911 can be attempted as this enquiry was conducted for the first time in this State in this Census.

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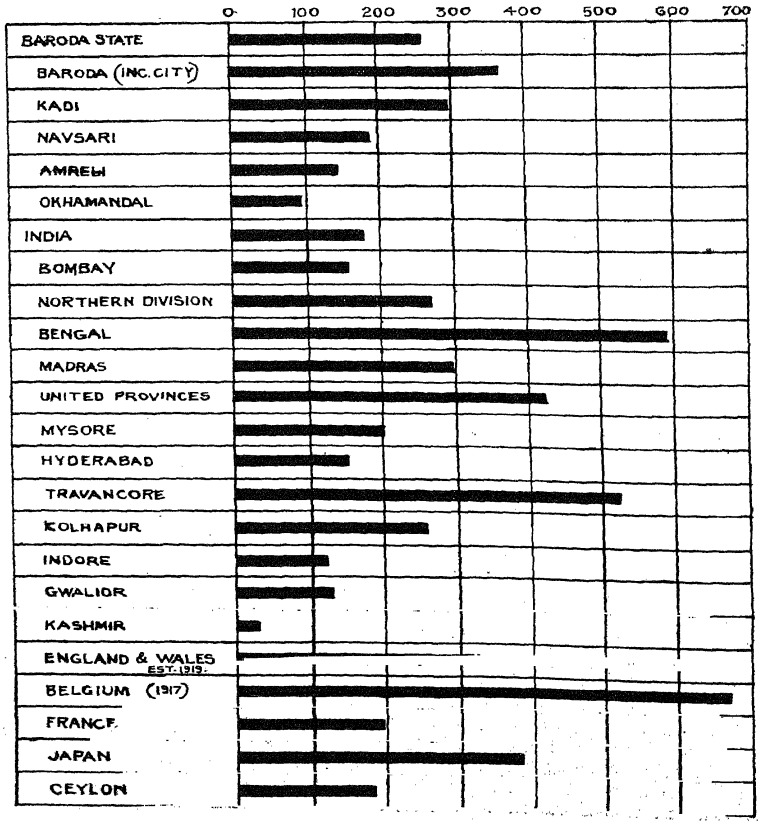
13. **Density**—From a consideration of the absolute figures we now proceed to consider the proportional; and in this respect, the usual practice is to state first the density or the average number of persons per square mile obtained on the hypothesis of uniform distribution of the population over the total area dealt with. The utility of such a calculation is of course mainly that it affords a standard of comparison with other countries. In itself the density of any area is unmeaning because it is the arithmetical expression of a uniformity which does not exist in practice. In particular is this statement true of this State ; for the crude density for the State as shewn in the State Table I given at the end of Part II (Tables) is 262, while the range of densities within the State extends from 7,286 per square mile in the City to 71 in Songadh. Taking for the present only talukas into account, the highest density is found in Gandevi with 753 to the square mile. The distribution of the population therefore is far from uniform, but the natural divisions can be arranged in order of density as follows : Central Gujarat, North Gujarat, South Gujarat and Kathiawad. The densities of these divisions are stated in the Subsidiary Table I printed at the end of this Chapter. The detailed consideration of these densities will be presently taken in hand, but in the meanwhile it will not be out of place to follow the practice of previous reports and give a diagram below of the density of this State and its individual administrative divisions, as compared with the figures of India generally, certain British Indian Provinces and Indian States, and a few representative countries of Europe and Asia. For these latter, where the latest figures were not available at the time of writing, the latest estimates have been given.

DENSITY COMPARED WITH OTHER STATES AND PROVINCES



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In regard to this comparison, a scale of densities has been adopted in Indian Census literature. Areas are "dense" if over 500 to the square mile, "fairly dense," if between 300 and 500, "average" if between 200 and 300, "thin" if over 100 and below 200, and "sparse," if below 100. According to this standard, Baroda State belongs to the class of "averagely dense" countries, although its metropolitan district belongs to the class higher. In the scale of densities Baroda ranks in the same class with the Northern Division of the Presidency of Bombay and the State of Kolhapur, which however are a little higher in density than this State. Baroda exceeds Bombay Presidency, Mysore, Indore, Gwalior, Kashmir and even Ceylon and France in the closeness of its population. Bengal, England and Wales, and Belgium are each more than twice as densely peopled, while Travancore is nearly so. Other places like Japan, the United Provinces and Madras are greater in density. Although this State has a slightly smaller density than the Gujarat districts of the Bombay Presidency, it is denser than Gujarat as a whole. Of the Natural Divisions into which India is divided, only Bengal, Bihar and United Provinces East, Malabar and Konkan, and South East Madras largely exceed this State in density, indicating the regions where the pressure of population is greater. West United Provinces, and East and North Punjab are regions of about the same density as here. In order of density the contiguous districts of this State and of British Gujarat may be arranged as follows: Kaira (445), Surat (408), Baroda (368), Ahmedabad (235), Broach (210), Panch Mahals (234), and Navsari (188). The Mahi Kantha and Rewa Kantha agencies have each a lower density than this State. The Kathiawad portion of His Highness's dominions supports the sparsest population per square mile: but even then the mean density of 132 for this area is higher than in the rest of Kathiawad which supports only 122 to the square mile. Thus, although forming part of the Natural Division of Gujarat which itself has only a density below 200 per square mile, this State compares very favourably in this respect with its contiguous territories, has a higher mean density than the average for India as a whole and is one of the most populous of Indian States.

14. Density by Natural Divisions.—We will now see how the population is distributed per natural division and whether any light is thrown by such distribution on the physical or other factors of density. We shall take the metropolitan division first, in the first place for the reason that its possession of the capital gives it a primacy of place amongst divisions, but also because it supports the densest population. Density may be calculated on the total area, irrespective of regions which from their nature preclude settlement, such as forest areas. Then, for a closer analysis, we can exclude such tracts from the calculation, and reckon the density on the area-space available for settlement. Again to help us to arrive at a correcter appreciation of the influence of physical conditions we may confine ourselves purely to the rural areas and leave the population of towns out of count. The situation in the area as a whole can then be contrasted with the particular densities of the different regions into which the natural division can be further subdivided.

15. Natural Divisions in Central Gujarat—The Central Gujarat division or Baroda *Prant* has 11 talukas and peta mahals which are arranged thus in order of density :—

Dense	Fairly Dense	Average	Thin
Petlad Bhadran	Padra Baroda Mahal excluding City	Dabhoi Sankheda Sinore Tilakwada Savli Karjan	Waghodia

These talukas group themselves naturally under four fairly well-marked areas. The main block of the *prant* is enclosed by the Mahi on the north-west and the Narmada on the south. The Petlad and Bhadran Mahals are situated across the Mahi on the north-west, and have sufficient natural affinities of soil and of the character of its population to be grouped under one name. This Trans—Mahi area together with the Anand and Borsad talukas of the British district of Kaira

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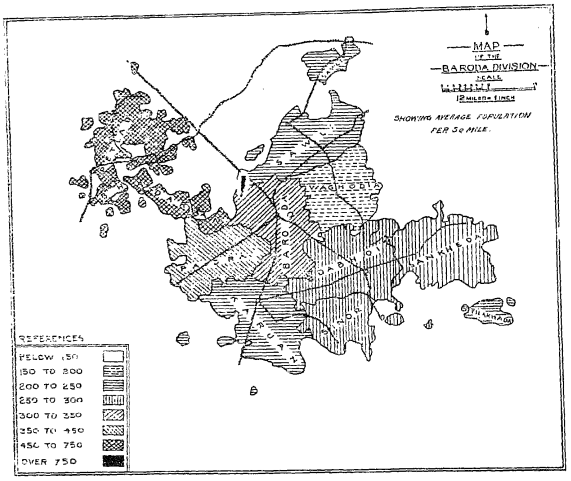

forms what is known as Charotar, one of the historic divisions of Gujarat, noted for the high fertility of its soil. Charotar has lent its name to one of the dialects of Gujarati and is the home of the Lewa Kanbi, the aristocracy of Gujarat agriculture: the soil is of recent alluvial formation, mostly light (*gorat*) or a little mixed (*besar*) in colour and capable of producing all kinds of crops. Charotar is the most congested portion of the State. It is here also that agriculture is the most intensive. The main block of the division south and east of the Mahi is divided into three well-marked regions. To the south of Baroda City which forms a kind of dividing mark, the region of the black soil begins. It comprises the south east of Baroda Mahal, and the talukas of Dabhoi, Karjan and Sinore. The black soil in Baroda is however so inferior that I have thought fit to exclude it from this area. The black soil region as is well known, grows cotton and is known as Kahnam. The Bhukhi river forms the southern boundary of this rich cotton-growing area; in the tract between the Bhukhi and the Narmada, cotton is also grown, but these rivers cut up the land into deep ravines, making it unsuitable for agriculture or settlement. There is however a rich fertile stretch of alluvial land near the banks of the Narmada. This great river has changed its bed several times in the course of its history, and the southern villages of the talukas of Karjan and Sinore are in reality on the site of one of its ancient beds. Here the black soil with its stretches of treeless desolation gives place to a wooded but very inferior type of land much impregnated with salt. The bulk of Dabhoi Taluka belongs to Kahnam proper, only the tract to the north of the Dhadhar having light or *gorat* soil. Between Kahnam and Charotar, there lies the Vakal tract comprising Padra and Baroda talukas. Vakal is a tract of poor sandy soil, capable however of producing rich crops of *bajri*, *tuver* and *kodra* in years of good rainfall and with irrigation of still richer crops of sugar-cane, potatoes, vegetables and chillies. It is inferior to Charotar in fertility, in that the admixture of sand is larger and there is a greater danger of salt efflorescences. Baroda taluka towards the south-east shades into Kahnam: but its black soil is very inferior and shallow within easy reach of the calcareous subsoil, which in Kahnam proper cannot be approached until after deep excavations. All over Vakal, the black and the red soils intermingle. But towards the north-east and south-east of the Division the black disappears and gives place to a ruder and more inferior soil. This region which is known as Chorashi comprises the Savli, Waghodia, Sankheda and Tilakwada mahals. "In this tract" to quote Mr. F. A. H. Eliot, "the soil is a poor shallow black with patches here and there of poor *gorat*, both greatly liable to salt efflorescences. Irrigation is unprofitable, for the water is brackish but the Chorashi tract grows magnificent grass and between the rice areas may be seen wide stretches of *bid* or grass land of especial value in the neighbourhood of a big city." The only success of this area is the rice which is grown as a wet crop in low-lying fields where water is impounded by embankments. The tract has a westward slope and is dominated by a solitary hill. The country becomes more difficult towards the east and the south with little available soil and scanty water communications. The population of this area is made up more of fighting classes than agriculturists with Kolis, and Rajputs who are little better than they. Towards the north and south-west of this area, the country has a wilder aspect, forest-covered, with stately trees and a diversified scenery. These forests however cover only an inconsidera-

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ble portion of the *prant*. The bulk of the population in Charotar, Vakal and Kahnam are typical agriculturists. The Rajput and the Koli appear in Kahnam, but are there dominated by the Kanbi and the other richer classes. They abound however in Chorashi.

16. Climatic and other conditions in Central Gujarat—The general health conditions of this *prant* are favourable to the growth of population except in Tilakwada and towards the east of Chorashi generally. The normal rainfall is 37·34 inches, distributed as in the margin amongst the natural divisions of the *prant*. The Kahnam area, although its black soil grows cotton and needs only a rainfall of about 25 inches for its cultivation, happens to have the highest normal rainfall in the Baroda *Prant*. Chorashi which is capable of growing rice comes after Kahnam in point of rainfall, while Charotar which has the highest density is lowest in rainfall. As the metropolitan division, this *prant* has been more highly favoured than the other divisions with means of communications, particularly railways. Besides the main line of the Bombay, Baroda and Central India Railway there is a net work of narrow gauge lines connecting all the talukas excepting Tilakwada and Bhadran. The projected extensions to these parts will in the near future completely encircle the division.

Natural Division	Normal Rainfall
Kahnam ..	43·39
Chorashi ..	40·59
Vakal ..	35·44
Charotar ..	32·47

17. Central Gujarat Densities—The densities of these four natural subdivisions of the *prant* are indicated in the marginal table. Density as calculated on the total area is given along with that on the rural area alone. From the marginal table it appears that Vakal follows Charotar in density: Kahnam, inspite of the money-bringing capacities of its soil, is not so favoured as Vakal for settlement; and Chorashi comes at the end with the lowest density. Calculating the figures purely on the rural areas the same order of density is found. It is not within the scope of this report to attempt an analysis of the different capacities of soils; but one aspect of theirs seems to have a demological interest. Briefly it may be stated that black soil has the advantage of "being easily tilled; while, being generally of great depth and containing a fair proportion of organic matter, it requires no manure, though where manure is employed the crops are naturally benefited. On the other hand *goradu* requires careful cultivation and abundant manure to produce good crops, but with good husbandry, and especially when means of irrigation are available, good *goradu* is capable of producing better crops than the best black soil, while at the same time it possesses a great advantage in the great variety of crops which can be produced. The intermediate soil, *besar*, when of good quality, may be accounted the best soil in Gujarat producing in luxuriance all the crops which can be grown in the best *goradu* soil." † The above quotation gives the clue to the reason why a tract like Charotar and Vakal offers greater attractions to the settler, particularly to the superior type of agriculturist than even the best Kahnam, and that is the variety of crops which the soil in these areas is capable of producing. Another reason is supplied namely that in Charotar, where *goradu* requires intensive cultivation, a great many more hands are required per unit of cultivation than in Kahnam, where, the tilling being comparatively easy, the cultivator can economise in his demand of field labour.

Natural Division	Density on			
	Total area	Area without forests	Rural*	Rural without forests
Central Gujarat (excluding City)	321	323	267	268
Charotar ..	637	..	439	..
Vakal	358	..	333	..
Kahnam ..	256	..	214	..
Chorashi ..	227	231	203	206

18. North Gujarat—North Gujarat or Kadi *Prant* is the largest division in the State. Like the Central Division, it consists of a main block which is com-

*For calculating rural densities for this and other tables, the areas and populations of towns have been excluded.

† Mr. J. L. Jenkins, Settlement Report on the Dabhoi Taluka.

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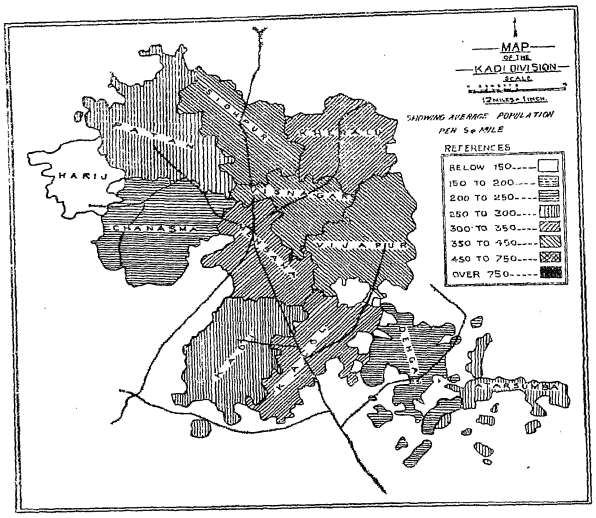

pact and a tract of country which is much interlaced with foreign territory. As in Baroda also, these two parts have a river—the Sabarmati—as the dividing line. The Trans-Mahi area in the Central Division is to the north-west, while the Trans-Sabarmati area is towards the south-west in North Gujarat. The main block is also enclosed, as in Central Gujarat, by two rivers, the Banas in the north-west, and the Sabarmati on the south and east. The Trans-Sabarmati area comprises the taluka of Dehgam and the peta-mahal of Atarsumba. The whole aspect of the country here is flat and well-wooded. Rivers abound, intersecting the face of the land with innumerable *Kotars*; the Vatrak which flows in the middle, the Khari between it and the Sabarmati, and the Varasi towards the east may be mentioned. The soils are of two varieties—a light *gorat*, very inferior to Charotar, much intermixed with salt, and requiring heavy manuring, and on the other side of the Varasi, the *mal* land with scanty vegetation—and its soil of light brown but very inferior clay. The population partakes of the nature of the soil. Towards the west, between the Sabarmati and the Vatrak, the Anjana Kanbis predominate, but the Kolis, the aboriginals of the plain, also abound; and in the east these form three-fourths of the agriculturists. Coming to the main block of the *prant*, we find that the Rajputana-Malwa Railway roughly divides it into two more or less equal portions—the eastern populous and fertile, and the western poorer, drier and more thinly inhabited. East Kadi consists of Vijapur, Visnagar, Kheralu, Sidhpur, Mehsana and Kalol. West Kadi comprises the rest of the division—namely, the big Patan taluka in the north with the ancient capital of Patan as its headquarters, Kadi in the south-west, Chanasma in the middle and Harij towards the far west. The Talukas in the division can be arranged according to density as shown in the margin. In the class, "Fairly dense", are seen all the talukas which form part of East Kadi. It is here that the best soil conditions are found, the climate is the healthiest, and the population the most intelligent and the hardest working. At places, notably about the centre of this area, the soil is very fertile; it is free from faults and with a fine texture. In these parts it approaches Charotar in its capacity to produce all kinds of crops. A part of this tract, especially in the north-east, produces rapeseed reputed to be the best in the world. The remainder is of the usual Vakal type, light, sandy, and needing irrigation. The natural drainage of the area however is not favourable to cultivation. Rivers like the Rupen are notorious for their throwing up at flood time volumes of drift sand two to four feet in thickness, and thereby turning fertile fields into white wastes of salt. Towards Vijapur the land becomes wooded and groves of mango and mahuda abound. The fertile zone includes the southern half of Sidhpur, the bulk of Kheralu, Visnagar and Vijapur talukas, the east of Mehsana, and north of Kalol. In west Kadi, on the other hand, the soil is of the usual type of sandy *gorat*, interspersed with black, especially towards the south of Kadi taluka. But this black is very inferior to the black of cotton growing areas, being very much mixed with salt and chunam nodules. The aspect is generally bare, except in parts of Patan and Kadi talukas.

Fairly dense	Average	Thin
Visnagar Sidhpur Vijapur Mehsana Kalol Kheralu	Patan Atarsumba Kadi Chanasma Dehgam	Harij

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Towards Harij, the country is a flat, gray plain, " almost treeless " to quote Mr. Maconochie, " save where the dead level is broken by small villages rising like islands from a sea. The crops are thin and stunted and the fields are everywhere interspersed with large patches of *Khar* land on which nothing will grow. The villages are clusters of miserable hovels built of mud and straw, more like pig-sties and beehives than abodes of human beings." The south of Kadi taluka together with the southernmost extremity of Kalol which forms what is known as the Khakhar tracts is equally bleak and treeless. The Kolis and Musalmans of this region call themselves Mevasis, " turbulent" or " given to plunder". Living on an inhospitable soil, for centuries they have preyed upon their richer Kanbi neighbours. Under the settled regime of present days the Mevasis have been given a privileged tenure and inured to the arts of peace. Peace has of course diminished crime but instead of inducing these people to stick to their land and make it profitable, has made them lazy, careless and improvident.

19. **Climatic and other conditions in North Gujarat**—The general health of the *prant* is very good, except in the extreme east of the Trans-Sabarmati area, towards the *Mal* country, where it is unhealthy and malarious. The rainfall in the division is precarious ; the last decennial average of 22·61 inches shows that it is less than the normal for this area which has been ascertained to be 25·61 inches. The rainfall in the different parts of the division is as shewn in the margin. The Trans-Sabarmati Area has as may be expected the largest rainfall in the division, because it is the region where the trees most abound ; and it is the only part of the division where forests exist. In point of Railways again, this division is almost as equally favoured as the Central. Mehsana, the headquarters town, is the centre whence many branches tap the farthest talukas. All the taluka headquarters are connected by rail, except Atarsumba. By the completion of the Kadi Becharaji section,* the metre-guage system will have almost completely encircled the division.

Natural Division	Normal Rainfall
West Kadi..	25·38
East Kadi..	24·42
Trans-Sabarmati.	30·05

20. **North Gujarat Densities**—Having obtained a general idea of this division we are now able to understand the densities of its different parts. A table has been prepared on the same basis as for Central Gujarat above, and is given in the margin. It is interesting to note that while West Kadi as a whole exceeds the Trans-Sabarmati area in density, in rural areas the latter has the denser population. The presence of large towns like Patan and Kadi in West Kadi helps to inflate its density figures. The rural population however is very sparse especially towards Harij and North Patan. In this *prant*, as in Baroda Division, the presence of forests affects density only to a very slight extent. The highest density is found in East Kadi, which is blessed with a good soil which at places can produce all kinds of crops. This part is also provided with many facilities for well-irrigation.

Natural Division	Density on			
	Total area	Area ex-forests	Rural area	Rural area ex-forests
Northern Division ..	296	296	247	247
East Kadi..	349	..	286	..
West Kadi .	244	..	206	..
Trans-Sabarmati.	239	243	217	222

21. **South Gujarat: General Conditions**—In South Gujarat, or Navsari *Prant* the territory ceases to be compact. The British district of Surat intrudes in the middle and nearly cuts it into two unequal portions. Only Mangrol in the north and Mahuva in the south serve as links between its western and eastern talukas. Partly from this circumstance and also in view of the differences in their physical conditions, this *prant* can be divided into three distinct areas, the western portion, consisting of the talukas of Navsari, Gandevi, Kamrej and Palsana, the middle area consisting of the detached talukas of Mangrol and Mahuva,

*At the time of going to press, the Kadi-Bechraji Section is completed with regular train service.

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and to the east, the talukas of Vyara and Songadh. The whole of this division offers a striking contrast to the rest of the Raj. In aspect, it is the most diverse : within its small compass it comprises the scenery of plain and upland, forests, rivers and the sea. In respect of the composition of its population this *prant* has a wider range than any other division—from the highly intelligent Parsi, Anavala and Vohora communities to the half-naked Dhanka, every variety of culture, or lack of it, resides within its limits. In the matter of climate also, the differences are equally striking. The Western group of talukas is generally healthy and temperate. Navsari and Gandevi from their proximity to the sea are particularly so. The maximum temperature rarely goes beyond 101° F. during the hot season. The Eastern mahals, however, are unhealthy throughout the year. Added to their general unhealthiness is the circumstance that these talukas are subjected to sudden onsets of epidemics, particularly cholera. The middle region has the climatic peculiarities of both these areas. Parts of Mahuva notably to the North of the River Purna—and of Mangrol are reckoned healthy. The forests in this *Prant* are important and noteworthy. Of the total area of 1,807 square miles, 552 square miles are forest land. The forest reserves are in Songadh and Vyara and in the Umarpada portion of Mangrol mahal. These forests not only contribute to the unhealthiness of the climate but also to the heavy rainfall that is the feature of these regions ; and in regard to density and the movement of population they have naturally a most important influence. The rainfall conditions also vary according to the nature of the tract. The normal rainfall for the whole division is 52·81 inches and varies in the different parts as shewn in the margin. In regard to railways, the state of things is inferior to that in Baroda or Kadi *Prants*. Besides the main line only three other lines exist : one in the north serving Mangrol, and another in the south connecting the port of Billimora with the hot springs of Unai are owned by the State. A third in the middle, the Tapti Valley Railway starts from Surat and passes through the Vyara and Songadh talukas of this division.

Natural Division	Normal rainfall
Western or Rasti..	52·90
Middle or Semi ...	45·10
Eastern or Rani ..	56·04

22. Natural Divisions in South Gujarat—(*a*) *The Rasti Areas.*—The Western talukas are usually grouped under the name of Rasti Mahals or the areas of civilisation, highly fertile and populous. The Rasti tract contains some of the finest lands in India. But even in this area a distinction must be made between the highly cultivated talukas of Navsari and Gandevi, and the less dense talukas of Kamrej and Palsana. In Navsari, the prevalent soil is *besar*, of a rich calcareous mould, more black than otherwise, but distinguished from the typical Kahnam by an abundant growth of trees and sugarcane. It is adapted for every variety of crop, particularly cotton (of the best variety), rice, sugarcane, plaintain, *juwar*, etc. It is better than *gorat* for it needs less manuring and labour of tilling. Towards the sea-coast, however, the soil becomes charged with salt, the water turns brackish and crops are poor and stunted. Gandevi is even more highly favoured by nature. It has a rich and pleasing aspect. Its alluvial soil is extremely fertile. It is reddish brown in colour, of great depth, and uniformly of a very fine texture. There is besides a little black soil rather inferior to Kahnam ; but on the whole these two talukas are exceptionally well-favoured and may form a class apart. The other talukas of the Rasti area, Kamrej and Palsana, are cotton-growing tracts. They are both unbroken plains of black soil, fairly well-wooded and carefully cultivated. Rice is also alternatively grown in Kamrej but of an inferior quality, while in Palsana *juwar* is as extensive as cotton. In all these four talukas, the cultivating class consists of the highly intelligent Anavalas and Kanbis. The general appearance of the people is one of comfort and well-nourished ease and it is in that respect a great contrast to North and Central Gujarat. Houses are much better-built here as we shall see later on than elsewhere in the State, with the exception of Charotar and Kahnam.

(*b*) *The Semi-Rasti Area.*—From the Rasti we go to the less favoured middle region which for want of a better name may be called Semi-Rasti. Here the forests begin to emerge and in Mangrol a whole peta mahal is covered with dense jungle. The physical conditions are inferior to the Rasti, and the constitution of the population shows how the *ujaliat* or the light-coloured classes have given place to the *kaliparaj* or the dark aborigines. In the settled portions of Mangrol, however, the soil is of good depth

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and mostly black. The staple produce is cotton with very inferior rice alternating. In Mahuva, the natural drainage is ample, which makes road-building and railway construction difficult, by reason of the land being furrowed by rivers and smaller water-courses. The whole country is wooded. The soil is mostly black, inferior of course in quality both to the Baroda and the Navsari Kahnam ; but at places, notably along the banks of rivers there is very good *goradu*. A large portion of the area is grass land—*juwar*, cotton and rice being the principal crops. The southern villages beyond the Purna, except round about Anaval are the poorest ; but the new railway line from Billimora, it is hoped, may help to open up these parts.

(*c*) *The Rani Mahals.*—As we leave the middle region, further eastward, we come to a wilder and more difficult country comprising the Vyara and Songadh talukas. These talukas in their physical characteristics are very unlike the settled portions of the State. From their unhealthiness, they are called the Rani Mahals. Over half of their total area is covered by dense forests. The Ambika River forms for part of the way its Southern boundary ; to the North, the great forest reserve is cut in two by the River Tapti. The Zankhri and the Gira are the only other rivers that are worthy of mention, but except in the rains, their waters sink in their upper reaches amid a mass of boulders and gravel. Towards the South, the lofty spurs of the Sahyadri appear and in the isolated hill-fort of Wadi Salher, a height of 5,263 feet above the sea-level is attained. The cultivable portions are few : the cultivated are fewer. The soil is mostly black, with patches here and there of very inferior *gorat*, all riddled with gravel. The greater part of this tract is submontane, like the well-known Terai section of the Himalayas. As mentioned above it is notoriously unhealthy : its water is unfit for drinking and full of organic matter. The bulk of the people belong to the various *Kaliparaj* tribes whose stunted mental development seems part the darkness of their forest landscape. By nature, incapable and thriftless, they have not taken kindly either to the soil, or even to the cheapened form, in which, in the name of compulsory education, polite learning is brought home to their doors. A perpetual prey to malaria, it is not surprising that the local Dhanka should soak himself in drink and readily sell himself and his belongings to the liquor seller. The bulk of the people is agriculturist but the land has deteriorated through the often rude and thriftless cultivation of these primitive tribes.

23. South Gujarat Densities—The talukas of this division may be ranged according to their density in the following order :—

Dense	Fairly dense	Average	Thin	Sparse
Gandevi	Navsari	Palsana Kamrej Mahuva	Vyara Mangrol	Songadh

According to the natural divisions the densities for this *prant* are as shewn in the marginal table. The figures are interesting. The Rani area has a total density of 111 ; while if we exclude forests the density mounts up to nearly double. For a proper comparison with Semi-Rasti only the density in rural areas exclusive of forests should be taken, as in the Semi-Rasti tract there are no towns. We find that excluding forests, Semi-Rasti still has a higher density than the Rani area. The order of density in any event is therefore not disturbed—the Rasti followed by the Semi-Rasti and then by the Rani. In the Rasti area, the figure of 390 is somewhat misleading. As indicated above it consists of two distinct types of country ; and so while Kamrej and Palsana together have a density of 279 to the square mile, in Navsari and Gandevi, it rises as high as 584.

Natural Division	Density on			
	Total area	Area ex. forests	Rural area	Rural areas ex. forests
Southern Division ..	188	271	189	235
Rasti	390	..	292	..
Semi-Rasti	159	210	210	210
Rani	111	214	103	199

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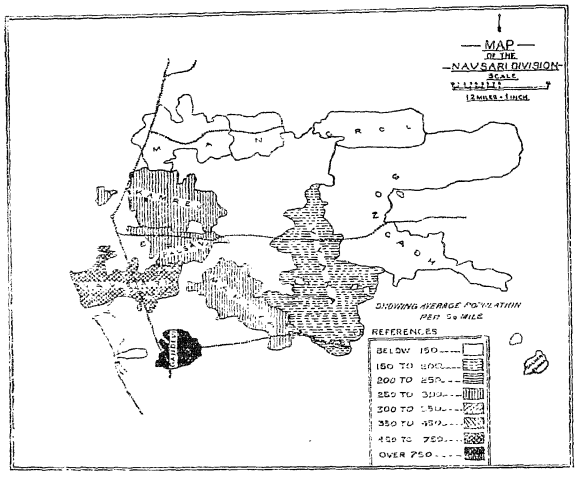
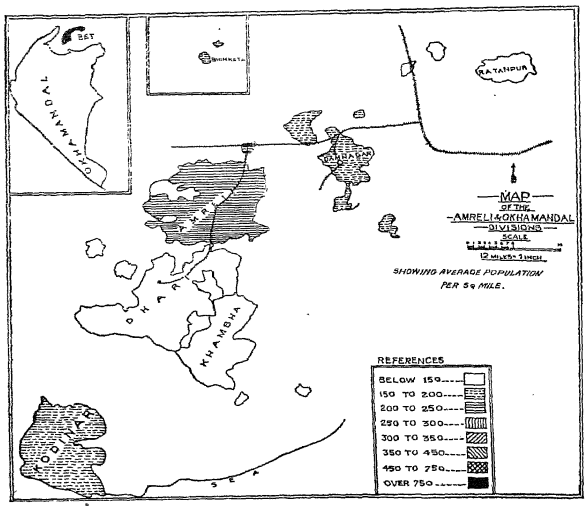


Compared to Charotar these two talukas combined have almost as high a density; Kamrej and Palsana together have a density similar to Kalmam.

24. Kathiawad Natural areas (*a*) *The Middle Block* – Turning to the Kathiawad portion of His Highness's territories, we come to a feckless country of moribund rivers and precarious rainfall. Except for three favoured spots, – the area round Damnagar; the region of the Shetranji valley comprising the rich cotton growing villages of the Vankia Tappa in Amreli taluka and the North and East of Dhari; and the little oasis near Kodinar town which is of exceptional luxuriance:—the soil conditions in the two *prants* of Amreli and Okhamandal are very depressing. In Amreli taluka, the river banks of the Shetranji have at places true *goral* soil where the mango thrives, and at other places a strip of *besar* runs parallel to its bed. Beyond it, but for no great distance, is the tract of black soil where cotton is grown. In the rest of the Taluka, the soil is shallow with the rock frequently cropping upto the surface: slight ridges abound; and loose stones make cultivation difficult. The surface of the country is generally flat, arid and monotonous.



Of Dhari and Khambha it has been said that 'regarding three-fourths of the tract, one may almost despair.' The general level of these two talukas is higher than in Amreli and Damnagar. In the higher levels "stones," to quote from Mr. Elliot's report, "encumber the fields or great tracts of sheet-rock render all cultivation impossible . . . . In the main three-fourths of it form a plateau or wide basin hedged in by an apparently circular line of hills on the south and west and on the east from Ambardi to Nani Dhari by a bold broad bridge. But this plateau itself has its inequalities. It is crossed and re-crossed by ridges of rock either quite bare or covered with the thinnest grass. Between ridge and ridge the stage may be higher or lower, if higher, then the soil is most scanty, if lower, then somewhat less scanty. Finally, the stage so supported by ridge and ridge slopes to some river-bed as

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barren as the hill top. Whatever is culturable is between ridge and river. To the untrained eye the whole aspect is hard and desolate. The tiny villages, half concealed by a few trees, are lost in the vastness of the undulating plain and in the general prevalence of stoniness, the cultivated portions of the land are unobserved. One peculiarity intensifies the impression I have sought to record. Kathiawad is pre-eminently a wheat-growing country wherever irrigation is possible. In Dhari the efforts of the cultivator are generally concentrated on small patches of sugarcane and wheat is neglected."

To the south and south-west of this region we have the Gir. Khambha Peta Mahal is almost all forests and hills. Here in the Gir, which is the source of so many of Kathiawad's streams, the ridges of the Dhari basin become transformed into ranges of hills, covered with tall trees, from which an abundant supply of timber and grass can be obtained. To the north and the east, are the fruitful low lands with good soil producing cotton, wheat, or sugarcane. These three talukas form a more or less connected block of country and may be referred to as the middle area. The climate of this area varies according to configuration. Amreli taluka and the north and east of Dhari are healthy. The Gir region, on the other hand, is malarious. The population of Amreli taluka consists very largely of the industrious and frugal Kanbis, and the proportion of Kolis is small. It increases however in Dhari, and in Khambha the Koli is predominant.

(*b*) *The Sea Coast Areas*—Kodinar and Okhamandal though widely separated from each other may be grouped together because both have a sea board. Both are similar also in their isolation from the rest of the Raj. These two talukas are cut off and hemmed in by surrounding foreign territory and as yet unconnected with the State railway system. Kodinar however is superior to Okhamandal in the possibilities of its soil. Within five miles of its headquarters town, where the Singhawada rushes into the sea, its steep banks form ridges which enclose some of the finest alluvial land in the State. There is a copious supply of water to fertilise the soil and the richness of its mould enables it to grow all kinds of crops. The extensive mango groves, and the fine wells which in solidity and magnificence are unequalled in the State are a feature of this part of the taluka. On the ridges and the higher levels, however, the villages are poor and the water facilities are nil. The other two rivers, the Sangawadi and the Somat bound the east and west respectively of this taluka and their valleys maintain fairly prosperous villages ; but the land is generally inferior compared to Central Gujarat. Okhamandal is even poorer and has the lowest rainfall in the State. On the sea coast, there is light sandy soil, but further inland a little better quality is met with—occasionally black, but more often *gorat*. None of these orders are however rich. The sea-winds are against the growth of large trees ; and the country abounds in stunted cactus shrubs and a variety of smallish trees called "*char*", which grow on marshy lands. The aspect is generally bleak and waterless, there being no rivers. In these sea-coast areas, the population is non-agriculturist in instinct and methods. Besides the commercial classes and the sea-faring population, the "lazy smoking Karadia", the thriftless Ahir and the turbulent Wagher are the typical squatters on the land. The Lewa and Kadwa Kanbis are scarcely to be met with. The prospects of this tract are more industrial than agricultural. The advantages of a sea-board are more than counterbalanced by large invasions of salt which seriously hamper the cultivator. The harbour possibilities of Velan, now only a quiet appanage of Verawal, and of Beyt, now given to temples, may have in store a rich future for this region.

(*c*) *The Scattered Areas.*—The next group of areas included in the Gaekwad's Kathiawad is the scattered bits comprising the talukas of Damnagar, Ratanpur and Bhimkatta. The last named is as has been mentioned before only an isolated village to the north near the Rann of Cutch, but in regard to the others, the general conditions are about the same, similar if a little inferior to those obtaining in Amreli taluka, without the latter's advantage in markets and railway facilities. In a word, "the soil is often shallow, the wells are good, the rainfall is uncertain." The country is level enough but occasional ridges of low hills intersect the plain, and through the thin layer of the soil, the stone or murrum frequently obtrudes itself. Round about Damnagar town, the soil is of an excellent black ; and the wells are very good. Cotton is mostly grown here, and at long intervals, sugarcane. Near Shiyanagar

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in Ratanpur Mahal the soil is also fairly uniform and on the whole of a superior class but the wells are poorer and brackish. Generally the condition of the people is not good, the problem of agricultural indebtedness being more acute here than normally elsewhere. The composition of the people in these areas is similar to Amreli.

25. General conditions in Kathiawad—Generally the contrast from Gujarat to Kathiawad is striking. The villages are huddled and wretched, the houses appear to be mean, and the people poorly clothed. "They are people who lead" wrote Mr. Seddon, "hard lives with few comforts. They complain of debt and sometimes their general courage to meet adversity and their gratitude for kindly treatment received seem to suggest too sombre a degree of resignation." For centuries this region has only supported a population of a moderately low density, content to live on the margin of subsistence and clinging tenaciously to the land. The normal rainfall for this region is 21·38 inches, distributed among the different parts as in the margin. The middle block has comparatively the largest rainfall, owing to its forests and hills. The total forest area in Amreli and Okhamandal *Prants* is 112 square miles; its bearing on density is of course less important than the forests in South Gujarat. The bulk of the forest area in this Natural Division is contained in the Middle Block, in the portions of the Gir included in Dhari and Khambha Mahals.

Natural Division	Normal rainfall
Middle Block ..	24·23
Sea Coast areas .	22·69
Scattered areas .	22·70

26. Kathiawad Densities—The talukas in this Natural Division are divided according to density as under :—

Average	Thin	Sparse
Amreli	Kodinar Damnagar	Dhari Okhamandal Khambha Ratanpur

A marginal table similar to that prepared for the other divisions is given, giving density for the area of the whole division as also separate figures for the different parts. Without the forest area, mean density rises to 144 for the whole division. In the middle region where the forests mostly occur, the density rises from 133 on the whole area to 158 on the area excluding forests. The Scattered Areas have the largest mean density (both total and rural) in the *prant*. The general range of densities however is altogether lower than in other divisions of the State. Even the Rani area in South Gujarat (without forests) is denser in population. In Kathiawad, even where the physical conditions favour the growth of population, the other factors operate against it.

Natural Division	Density on			
	Total area	Area ex. forest	Rural area	Rural area ex. forests
Kathiawad ..	132	144	99	108
Middle Block ..	133	158	102	120
Scattered areas .	134	..	114	..
Coast areas ..	129	130	91	92

27. Subsidiary Table II—*Classification by Density.*—We have now surveyed the four divisions in turn. We have seen the distribution of the talukas according to the natural areas in which they can be grouped and studied the general physical conditions operating in each. Subsidiary Table II shows how the talukas are classified according to density. Excluding for the moment the categories of 900-1050 and 1050 and over, in which are included the town and island of Beyt, and the City and Cantonment of Baroda respectively, the highest densities are 750-900, 600-750 and 450-600. In these classes are included the Charotar talukas and the garden half of Rasti-Navsari. In the next lower class 300-450, the Vakal area and East Kadi are included. In the class, 150-300, we have the two Kahnams (of Central and South Gujarat), West Kadi (except Harij), Chorashi, Trans-Sabarmati, Mahuva and Vyara talukas, and four individual talukas of Kathiawad (Amreli, Damnagar, Kodinar and Bhimkatta). The last class under 150 consists of the remainder of Kathiawad, Harij and the forest covered Songadh and Mangrol talukas. Thus, whether we take the natural regions or take the

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talukas individually, the distribution of densities works out nearly the same results. The mean density of the State being 262, we find that individual talukas with an extent of over 48 per cent. of the total area of the State belong to this class of density. In South Gujarat and Kathiawad where the bulk of the forests exists, over 50 per cent. of their total area is occupied by talukas, each with a density under 150. The grouping under natural areas enable us to perceive the affinities in physical conditions which cause similarities in density. The analogy between Charotar and the garden lands of South Gujarat, on the one hand, and the two Kahnams have been already pointed out. Vakal and East Kadi may be similarly grouped together : and so may West Kadi and Trans-Sabarmati be classed with Chorashi and Semi-Rasti. The forest regions of Kathiawad and South Gujarat have a like correspondence in this regard.

28. **Factors of Density**—*Rainfall and Density.*—The above discussion gives us the basis for the statement that in an agricultural country, where the majority derive their sustenance from the land, it is physical factors such as soil, rainfall and climate entering into the general environment that have the most powerful operation in the distribution of the population. But there are other factors as well : the history of the tract, the composition and aptitudes of its people, the standards of their social life and comfort, the economic factors also—nearness of markets, facility of communications and so on. And in regard to these factors, not any one of them, without the coexistence of others, can alone account for the density of a particular tract. Mere fertility of soil in Damnagar and Amreli will not produce density, if unaided by a steady rainfall or the facility of markets or of means of communications : on the other hand, a heavy rainfall does not help in the Rani area, where a hard soil added to the general unhealthiness of climate makes it unsuitable for settlement. Again West Kadi in spite of its salubrious climate supports a sparse population, while the Rasti area, which is not so healthy and occasionally suffers from malaria, is densely populated. Further some of these factors are operative only to a very limited extent. This is especially so with rainfall. If it was truly operative, there should have been a direct relation between rainfall and density, *i.e.*, a high density should have shown a high average in rainfall. Broadly speaking, population concentrates in fertile lands : and fertility is the result of a good water supply ; rainfall may be regarded as the chief source of water-supply : *a priori* therefore there should be a close correlation between the rainfall and density. But there is in reality no such correspondence : even if we correct the density figures by excluding forest areas and taking only rural densities into account, the correspondence is not close. In the margin we give a table of the natural areas of the State with their rural densities and rainfall. The density figures are calculated on the rural areas and excluding the forest tracts. It is on rural areas presumably that the rainfall reacts most forcibly ; and in the forest regions, the rainfall is high, but the density low : the density on settled areas is taken therefore to facilitate proper comparison with the rainfall. But even then the two do not seem to correspond anywhere except in the Kathiawad areas ; and there only very superficially. The low density in those areas has no necessary causal connection with their low rainfall. Again, if it is remembered that East Kadi with about the same normal rainfall as Kathiawad has more than double its density, the correspondence between rainfall and density in Kathiawad will be found to be more accidental than otherwise.* This want of correspondence between the two sets of circumstances is due to the fact that the different kinds of soils require varying amounts of rain and at their proper times ; and also it is not so much the total volume of preci-

Natural Division	Density on rural area	Rainfall	Order according to density	Order according to rainfall
Charotar ..	439	32·47	1	7
Vakal	333	35·44	2	6
Rasti	292	52·90	3	2
East Kadi ..	286	24·42	4	10
Trans-Sabarmati	222	30·05	5	8
Kahnam ..	214	43·39	6	4
Semi-Rasti ..	210	45·10	7	3
West Kadi ..	206	25·38	8	9
Chorashi ..	203	40·59	9	5
Rani	199	56·04	10	1
Middle Kathiawad	120	24·23	11	11
Kathiawad scattered areas ..	114	22·70	12	12
Kathiawad Coast areas	91	22·69	13	13

*The correlation has been also worked out mathematically. The normal rainfall and the mean density of each taluka have been taken. The coefficient of correlation has been found to be ·2338, which is a very low correlation.

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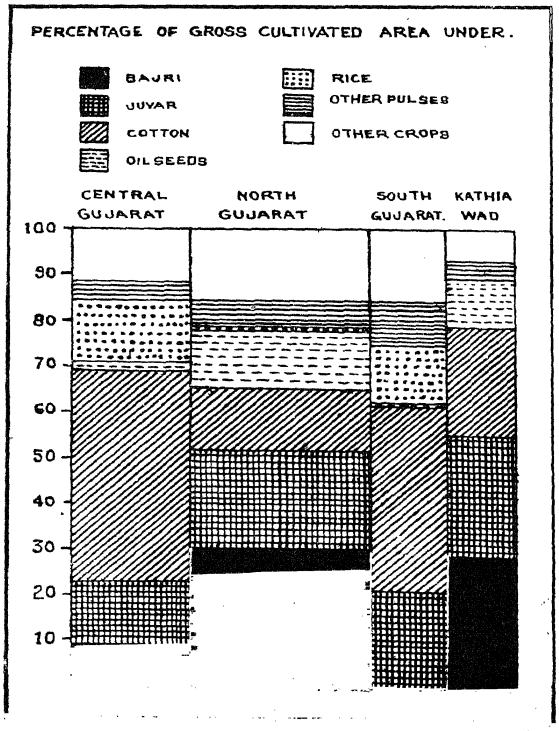
pitation, but its distribution at the proper place and season that matters. A heavy rainfall may be a blessing in Harij, but brings only disaster to Kahnam.

29. Correlation between Agricultural Water-supply and Density.—But if rainfall alone fails as an explanation of the fluctuations in density in different parts, it can be used along with other factors to serve as a fairly satisfactory test. Rainfall generally affects the *Kharif* cropping which enables the ryot to have his staple foods and also in the black soil areas to make a forward sale of his money-bringing cotton. For the *rabi* crop it is only indirectly useful as increasing the store of water for purposes of tilling. A good monsoon fills up the wells and the natural water-courses ; while if irrigation facilities exist, this factor along with the natural rain-water constitutes what may be called the total agricultural water-supply ; and this provides a truer test than rainfall alone for density. If we compare the extent of agricultural water-supply with corrected density, such as density on cultivable area, we shall be able to find an almost exact correspondence. But the question is how this factor of agricultural water supply is to be estimated. Irrigation facilities are in the shape of canals, wells, paddy tanks, and natural water-courses. Rainfall is measured in inches. The two cannot be exactly combined. If however the irrigated area is added to the Kharif area (for which we shall take rice, *bajri*, *juwar* and cotton as the typical crops), the two together will give a rough idea of the extent of water supply in a particular tract.* The percentages of gross cultivated area under different crops are indicated in the Sub-Table I. For facility of understanding the different percentages are plotted here in the marginal diagram. Rice is almost non-existent in North Gujarat and Kathiawad ; which is the case with *bajri* in the Southern Division. Cotton features largely in almost all the divisions, but its quality varies being at its worst in Kathiawad. The kind of cotton that is grown in Amreli and Damnagar for instance is vastly inferior to the Broach variety of cotton usually favoured in the Kahnam ; although the quality of cotton grown has deteriorated in all parts of the State, the deterioration has been most marked in Kathiawad, where formerly two kinds of cotton—*deshi* and *mathia*—were grown. The former has practically disappeared from Amreli *Prant* owing to the succession of lean years, and to the decreasing fertility of its soil. The *mathia*, though hardier than the other and more quickly maturing, is of a very inferior staple compared to the true Gujarat Kahnam variety. In South Gujarat, for instance, about 324·5 square miles are sown with cotton. In Kathiawad, the cotton area is about



*This calculation follows the general lines of the discussion in Mr. E.A.H. Blunt's Census Report for the United Provinces, 1911, pp. 17 et seq. *Juwar* is sometimes raised as a winter crop but it is taken here as it entirely depends on the monsoon.

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170·4 square miles ; but in view of the inferior staple grown, it will be safe to say that the yield and the value received in exchange for it in the latter division will be about one-half of what is produced in the same area in the former. In view of the varying qualities of cotton grown in different areas of the State, the true Kharif area will be obtained not by mere adding up of the portion of the cultivated area under *Kharif* crops, but by giving a double weight to the cotton of the two Kahnams in reference to the Amreli variety. Thus the comparison with density will be possible not on a mere quantitative basis, but on some rough qualitative criterion. Calculating thus the proportions of the *kharif* area and the irrigated area, and comparing them to density on cultivable area we get the marginal table. It will be seen that the Southern and Northern Divisions interchange places, otherwise there is correspondence. The superiority of the Southern over the Northern is due doubtless to the greater fertility of its cultivated area. In fact if we take the density on cultivable area only into account, we will find that the Southern Division has a higher figure than the Northern.

Natural Division	Proportion of watered area to total cultivated area	Order according to watered area	Order according to density
Central ..	83·7	1	1
Southern ..	76·21	2	3
Northern ..	73	3	2
Kathiawad ..	71·5	4	4

30. Density and Cultivation—The proportions of cultivable land to the total area and of cultivated to cultivable afford another basis for an interesting set of correlations. Of course the defects involved in the calculation of proportions of cultivable land to the total area should be at once admitted. As Mr. Blunt in his United Provinces Report for 1911 pointed out, much of the so-called cultivable waste includes land which is either permanently barren or else reserved for uses which are only ancillary to agriculture. In regard to the *layak padtar* as well as *Khata padtar* land in this State, Mr. Blunt's remark holds good. Some of it are reserved as private grass lands, some as well-runs or threshing floors. Occasionally the inordinate land hunger of the Kanbi induces him to grab more land, particularly in Kathiawad, in Dhari for instance, than he can cultivate profitably. As a result the proportion of cultivable area is inflated more than what it should be in reality. With this reservation, we should now try and find how far cultivation may be expected to influence density. The element of double cropped area, which is insignificant in this State, may be ignored.* Double cropping which would *a priori* have reference to the quality of the land has in reality no necessary connection with it at least in this State, being often due to thriftless cultivation, the ryot being more often than not anxious to get as much immediate profit out of the land as possible. Double cropping exists in North Gujarat and Kathiawad more than in the other divisions, where with a richer soil and quicker crop returns, it is not always resorted to. The factor of irrigation, again, is of little consequence as a test of the quality of cultivation for in cotton areas which occupy so large an extent in the Central and Southern Divisions, the black soil requires little or no manure or irrigation. The Kadi *Prant*, therefore, which has the least percentage of cotton grown, shows the largest proportion of irrigated area in the State. The only safe basis for comparison with density is then (*i*) the cultivable area, which with the limitation noted above gives the *quantity* of land available, (*ii*) the proportion of the cultivated area to the total which, besides bearing on availability, shows also the aptitude and the character of the cultivator, evidencing thereby the *quality* and the *resources* of the population, and (*iii*) the proportion of cultivated area to cultivable, — bearing directly on the *quality* of the land. All these factors combined may have a direct correspondence with density. The marginal table illustrates this in a useful way. The figures are taken from Subsidiary Table I ;

Natural Division	Proportion of cultivable to total	Proportion of cultivated to		Order according to col. 2	Order according to col. 3	Order according to col. 4	Sum of columns 5 to 7	Order according to cultivated	Order according to density
		Total area	Cultivable						
1	2	3	4	5	6	7	8	9	10
Central ..	85·4	(67·8)67·8	79·9	2	1	1	4	1	1
Northern ..	87·3	(53·1) 53·1	60·8	1	2	3	6	2	2
Southern ..	55·4	(61·4) 40·4	77·0	4	4	2	10	3	3
Kathiawad .	81·8	(53·2) 48·8	59·7	3	3	4	10	3	4

* Mr. Blunt however accepts double cropping as a test of the quality of cultivation.

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the absolute figures for the cultivable and the sown area have been taken and the proportions have been calculated thereafter. As regards the quantity of land available, we find the Southern Division ranking the lowest, because it is the most forested part of the State. The second question is as mentioned above complicated with that of availability; and if we separate the forest areas and then calculate only on the area available for cultivation it is instructive to find that the order is disturbed: the Southern Division comes to the second place and the Northern and Kathiawad divisions almost tie for the last. This order corresponds with order according to density on cultivable area. (The proportional figures calculated on area without forests are given in brackets in column 3 of the marginal table). The preponderance of the Southern Division over the Northern in regard to the proportion of cultivated area to total available area is as much illustrative of the superior resources of the ryot in the Rasti tract, as it is of the predominatingly agricultural character of the aboriginal population in the Sem-Rasti and Rani regions. The third point about the quality of land is illustrated in column 7 of the above table. Here again the Southern Division comes to the second place; and the order in this respect corresponds to order according to density on cultivable area. The sum of all these circumstances gives the order according to cultivation in column 9, where we find an almost exact correspondence with order according to density on the total area. It is true that while the Southern and Kathiawad Divisions tie for the last place in cultivation, the latter is lower in density than the former. It must be understood in this connection that density in Kathiawad, both in the Gaekwad's portion as outside, has had to adjust itself to local means of subsistence and has been determined since long by the circumstances of its violent history which made it before the present regime a constant prey to wars and unstable conditions of economic life. The poverty of its people as much as the afflictions of providence have joined to the other causes in keeping the population of this tract to moderately low dimensions. As a result the natural increase is low, and the number of emigrants who seek livelihood in other parts is also large.

31. Density and Standard of Comfort: Luxury Crops—We now proceed to see how density can be correlated with the standard of comfort. Standards of comfort are certainly difficult to guage in regard to a whole population. On the assumption, however, that the population of the State is mainly agricultural, comfort may be said to have a reference to the kind of crops grown. The *Kharif* crop may be generally referred to as the food supplying crop, giving to the ryot his *bajri*, *juwar* and rice. Harvesting begins earliest with *bajri*, and then with rice and *juwar*. Cotton is indeed sown in the monsoon, generally however mixed with rice, but the picking is usually undertaken in February and March, and not earlier than December. The *Rabi* crop on the other hand brings to the ryot the wherewithal to pay the Sarkar and enables him to set apart money for luxuries and extraordinary expenses. It is to the extent of the luxury crops then that we must look to find the standard of comfort of a particular area. Of the food crops *bajri* and *juwar* form the staple foods, but rice belongs to the rich and is largely sold. It is, therefore, a luxury crop. To this category, belong also wheat, cotton, oilseeds, fodder-crops, tobacco, opium, garden stuffs, etc. If we add up the area, sown with these typical luxury crops, and after giving the same weighting for cotton as we did in para. 29, compare the figures with density, we find that the order in luxury crops agrees with order according to density on cultivable area. The order according to crude density on total area would give the third place to the Southern Division on account of its forests.

Natural Division	Order according to density on cultivable area	Proportion of luxury crops to cultivated area	Order according to luxury crops
Central ..	1	82.8	1
Southern ..	2	70.29	2
Northern ..	3	38.7	3
Kathiawad ..	4	31.70	4

32. Summary—To sum up: the physical features of each division influencing the growth of population, their natural resources, climate, and facilities of communications—in short the main factors physical and economic—that go to make up environment, have now been dwelt upon. In climate, as hinted in the preceding paragraphs, we would give precedence to the natural divisions in the

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following order : North Gujarat, Kathiawad, Central and Southern Divisions. In regard to natural drainage—not an unimportant consideration—the order would be Central, Southern, Northern and Kathiawad. As to Railways and other means of communications, the divisions range as under : Central, Northern, Southern, and Kathiawad. Other factors may be mentioned but they are not so readily measurable. The factors so far considered may be now combined and roughly taken to represent what may be called the environment for each division. We may, therefore, sum the results and see how far they correspond with density. In the marginal table this is done and we find from columns 9 and 10 that there is an exact correspondence between environment and density which goes to prove the thesis with which we started the discussion in para. 27, *viz.*, that density follows environment and is almost entirely conditioned by it.

Natural Division	Order according to						Sum of cols. 2-7	Order according to environment	Order according to density
	Climate	Natural drainage	Communications	Agricultural water supply	Cultivation	Luxury crops			
1	2	3	4	5	6	7	8	9	10
Central ..	3	1	1	1	1	1	8	1	1
Northern ..	1	3	2	3	2	3	14	2	2
Southern ..	4	2	3	2	3	2	16	3	3
Kathiawad	2	4	4	4	3	4	21	4	4

33 **Density and Standard of House-Room**—We have hitherto confined ourselves more or less to agricultural conditions—climate, rain-fall, circumstances of the soil, water-supply, cultivation, and lastly crop values in their bearing on comfort. There is another direction in which the density conditions can be studied from the point of view of standard of comfort, namely, their relation to the standard of house-room. The classification of home-steads was a special inquiry conducted along with the recent Census, not synchronously however on the Census day, but while the houses were being numbered for Census purposes in October 1920. Along with the house list (Form No. 8) a supplement was added asking for information regarding the amount of room-space per unit of population. Details were also sought in the same form of the number of livestock and agricultural implements enumerated in each house. Home-steads can be classified in a variety of ways : according to extent for instance, as shewn by the number of floors and rooms ; according to quality of structure, as shewn by the materials with which it is built, and the kind of conveniences, *e.g.*, windows in front, it contains ; or lastly according to accommodation, as shewn by the number of families and number of individuals inhabiting per unit of space. The definition of a " house " adopted for this Census was the same as in 1911—by which the social criterion was emphasised in preference to the structural. The " house " was defined to consist of " the buildings, one or many, inhabited by one family, that is, by a number of persons living and eating together food cooked on one *chulah* or in one mess with their resident dependents such as mother, widowed sister, younger brothers, etc., and their servants who reside in the house." The result of this definition was that practically it identified the family with the Census " house," except in the event where more than one family resided in one room, in which case only one number was given to that room. In consequence of this definition, the classification of houses according to the standard of comfort meant in effect an enquiry into the number of rooms in the occupation of a family and thence into the extent of space available for each adult individual. For this last object, the standard family was taken to mean three adult persons, children under ten being excluded as not being of any consequence from the point of view of accommodation. Home-steads were divided into three classes : (*i*) *above comfort* : where the unit of space allowed for each individual was at least two rooms or a minimum of six rooms for a standard family,—bungalows with compounds were an exception, in whose case a minimum of four rooms per family was allowed for the first class ; (*ii*) *in comfort* : in this second class were comprised all houses and bungalows below the above limits, but above the third class ; and(*iii*) *below comfort*: where the standard family was allowed only one room between themselves. In the last class one adult person would thus have *at most* one-third of a room-space for himself. But a family consisting of a single adult person, living in one room would go up to the second class. In the counting of rooms per family,

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it was laid down that only living and sleeping rooms were to be reckoned the *osri* (veranda) and the *rasodu* (kitchen) being excluded from consideration. Where the kitchen was inside a living room, it was perforce considered. The *padsal* which in many parts of the State is used as a sitting or dressing room was also included in the reckoning. Precise instructions were laid down about these and also that only occupied houses should be classed. Inspite of these, however, numerous mistakes were discovered; and the work had to be carefully revised particularly in regard to towns. In many talukas, whole villages were also revised; and finally a trained hand from the Central Census Office was deputed specially to revise the work in Kadi, Visnagar, Vadnagar and Pij towns.

34. **Comparison with the Faridpur Enquiry of 1906-10** It may be remembered that a similar enquiry was conducted, but under more favourable conditions, in Faridpur in Bengal by the late Major J.C. Jack, I.C.S. The enquiry was conducted along with other items of economic investigation in connection with the gigantic labour of preparing a Record of Rights for the district of Faridpur. The work continued for years in leisurely stages. Mr. Jack was helped by a band of enthusiastic University men, whose academic qualifications were a guarantee of the success of the inquiry. In regard to the standards of comfort, Major Jack laid down four categories,—(i) *In comfort*; (ii) *Below comfort*; (iii) *Above indigence*; and (iv) *Below indigence or starvation.* In the work of classification Major Jack left wide discretion to his staff in his instructions to them. The statements of the householder as to the size of his home-stead were to be carefully scrutinized by a personal investigation into the economic condition, the physical and social appearance, the standard of subsistence generally, of his family and were to be finally adjusted by reference to an analysis of the family budget, the statement of earnings, of the quantity of paddy consumed and so on. "Comfort" was deemed to be a "condition in which the material necessities of life could be fully satisfied." The interval between this and 'starvation' was covered by the standards 'above starvation' and 'below comfort.' Where the enquirer found an "agricultural family well fed, well-housed, well-clothed, this was comfort..... In most cases the evidence of the eye is decisive, but there are those of a miser's nature, who live poorly but possess much, and others of a spendthrift nature who live well but end in ruin." In the Baroda enquiry, as little as possible was left to the discretion of the local enumerator. The categories were simplified as much as possible, for the subtleties of the Bengal classification could not be readily intelligible to the bulk of the personnel that is available for a general Census. The enumerators were further particularly forbidden to be inquisitive about the size of income. The scope of the inquiry was restricted purely to the extent of house-room, as represented by the *number*, and not the *area-space*, of rooms in possession of an adult individual. Again, the work was required to be completed along with house-numbering within about two months. And lastly, it was hoped that the large figures of a general enquiry could be trusted to eliminate the anomalies of the miser and the spendthrift.

35. **State Table XVIII**—The limitations of the present enquiry have been amply stated. The reader may be assured however that the work has been thoroughly revised. Numerous mistakes have been discovered and corrected: and the results are presented in the hope that they may be regarded as a significant contribution to the economic survey of the State. The detailed figures by talukas and towns and different wards of the City of Baroda are given in the State Tables XVII and XVIII. In this chapter we are concerned only with Table XVII. As the State Tables Volume only circulates within the limits of the State, for the information of the general reader, the main results are summarised below. It may be premised however that out of 738,498 the total number of houses numbered in the State, 522,219 were classed in October, 1920; while on the Census day, only 512,845 were inhabited. It appears therefore that inspite of instructions some unoccupied houses must have been wrongly classed. At the same time it must be remembered that the enquiry took place in October, before the Dewali, and many absent families must have returned to their homes to take advantage of the holidays, so that it may be presumed that the number of occupied houses was larger about that time than on the Census day.

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Division or City	Classification of Home-steads					
	Above comfort		In comfort		Below comfort	
	Number	Proportion per mille of houses	Number	Proportion per mille of houses	Number	Proportion per mille of houses
1	2	3	4	5	6	7
The State	15,892	30	87,828	168	418,499	802
The City	5,382	293	15,812	596	5,341	201
Central Division	4,551	29	32,414	204	122,163	767
Southern	2,010	28	9,391	131	60,223	841
Northern	3,490	16	27,313	122	193,719	862
Kathiawad	456	11	2,898	72	37,053	917

The Divisions and the City have been arranged according to the scale of comfort of their home-steads. Excluding the City, for the moment, which naturally tops the list, we find, as may be expected, the order of the districts in regard to the first two classes is exactly the reverse of what it is in the third class. According to this Table therefore only 3 per cent. of the total number of classified houses belongs to the first class and as many as 80 per cent. belong to the third class, *i.e.*, in 8 houses out of 10 there is only one habitable room providing accommodation for at least 3 adult persons. On the assumption of uniform distribution of persons per each class of house, the proportions in the above Table represent also the proportion of the total population accommodated in each class of house. But we must remember that the size of families varies according to the nature of their residence or even according to their social standards. The temporary resident would presumably have a smaller family about him than the permanent ; and the socially higher classes would have normally smaller families than those lower. So in regard to the former, the above Table would fail as a guide to his normal standard of living ; and in view of the latter circumstance, the proportion of each class of house to the total would not give a clear idea of the proportion of the total population, accommodated in each class. In any event however the figures in columns 6 and 7 in the above Table may be taken to represent the minimum both as regards the number and proportion of houses (below comfort) and also in respect of the proportion of the total population contained therein. At least 80 per cent. of the population of the State it is certain live in one-roomed dwellings ; and as the number of persons per individual house of this class is larger than in the classes higher for the reasons just mentioned, there can be no doubt that the proportion of the population living in this margin of comfort is even higher than 80 per cent. Similarly, if we remember the definitions on which this enquiry is based, the figures would not by themselves give an idea of the structural conditions of the houses, *e.g.*, of the number of rooms contained in them. But some idea of the number of rooms can be had by combining the totals of adult persons and of classified houses. From the Age Table (Imperial Table VII) we learn that persons, aged 10 and over in the State numbered 1,556,841 in the recent Census. If we divided this figure by the number of classified houses and assumed a uniform distribution of the population per house, there would be no large error involved in the proceeding, although this special enquiry did not take place synchronously with the Census and the number of houses classified does not agree with that of inhabited houses. Thus we get 298 adult persons per 100 classified houses. On the assumption of equal distribution, the first class will accommodate 47,288, and the second, 261,727 adult persons. In regard to the first and third classes, the room space is sufficiently clear, if we neglect the bungalows whose number is insignificant. For the first class houses, there would be about 94,500 living rooms on the basis of two rooms per person.* The third class houses will have the same number of rooms as the total of that class. For the intermediate class the range is fairly wide from over one-third of a room to below two rooms for each individual. The mean works out to a little over a room for one person, which gives 305,350 rooms for the intermediate class. The total for the three works out at

*It is true that the definition allots a minimum of two rooms per individual adult for the first class. In the best class houses, the room space must be higher. But on the other hand we have assumed a uniform distribution of 2·98 adults per house, irrespective of class ; while the truth is that in the first class, the number of persons per unit house is much less. That is why a uniform two-room basis is assumed to minimise the error involved in both ways.

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818,349 rooms for 522, 219 houses, *i.e.*, 1·6 or hardly two living rooms for each house in the State. This works out also at 10 rooms for 19 adults or 26 persons of all ages.

36. Classification of Home-steads by Natural Areas: Order according to Comfort—Turning from these general considerations, we will conclude our discussion of this question by referring to the state of things as disclosed by the figures in the different natural areas into which we have divided the Raj. The marginal figures give the details per natural area. The natural areas are arranged according to their final positions in order of comfort of houses. This final order is arrived at by taking the proportions of first and third classes each to the total, and the ratio of first and second classes to the third and combining them for purposes of comparison. One factor by itself is not sufficient to explain the whole state of things in a particular locality. The presence of large urban communities with comparatively high standards of comfort, may inflate the proportion of the first class houses in certain localities; while large aboriginal populations with their prolific families may help to swell unduly the proportion of third class houses in other areas. It is necessary therefore to study the cumulative effect of these ratios and to deduce therefrom the final order according to comfort. This final order is seen in the column 9 of the table, and is highly instructive. In regard to "Above Comfort," the favoured regions of Kahnam and Charotar in Central Gujarat, and of Rasti Mahals in the Southern Division easily outdistance the other parts of the State by a long interval. It is true that East Kadi which comes next to these beats Rasti in the comparative infrequency of houses "below comfort," but that is due no doubt to the fact that the latter has a large Dubla and other Animist population; but on the whole the three areas above named retain their places in the final order.

Natural Area	No. of first class houses per 1,000 classified houses	Proportion of first and second class to 1,000 3rd class houses	No. of third class houses per 1,000 classified houses	Order according to column 2	Order according to column 3	Order according to lack of third class houses	Sum of columns 5, 6 and 7	Final order according to comfort of houses	Order according to density
1	2	3	4	5	6	7	8	9	10
Kahnam ..	54	540	649	1	1	1	3	1	6
Charotar ..	36	354	731	3	2	2	7	2	1
Rasti	44	282	780	2	3	4	9	3	3
East Kadi ..	17	196	752	4	4	3	11	4	4
Vakal	15	176	850	5	6	6	17	5	2
West Kadi ..	14·8	149	870	6	7	7	20	6	8
Chorashi ..	8	181	847	10	5	5	20	7	9
Kathiawad middle block ..	11·8	107	903	9	9	9	27	8	11
Semi Rasti ..	6	134	882	11	8	8	27	9	7
Kathiawad Coast	14	81	925	7	11	11	29	10	12
Rani	12·2	69	935	8	12	12	32	11	10
Trans Sabarmati	5	102	907	12	10	10	32	12	5
Kathiawad scattered areas ..	4	56	947	13	13	13	39	13	13

37. Density and Comfort—It is interesting in this connection to compare this order with the order according to density. Broadly speaking density, as mentioned before, is conditioned by environment, and would appear to seek the most favoured areas. Again, it is obvious that where conditions of existence are the most favourable, there the evidences of comfort will be most apparent. *A priori*, therefore, some correspondence may be expected. The order according to density is given in the final column of the above table, from which it will be seen that except in two instances the two sets of circumstances correspond fairly enough. The exceptions are Kahnam and Trans Sabarmati areas. In regard to the former, it must be remembered that it is a predominantly cotton growing tract; and the black soil, as has been pointed out already requires comparatively less amount of labour and less intensive agriculture, per unit of cultivation than other soils (*vide* para. 17, supra). In cotton areas therefore only a moderately high density is the rule. The Kahnam density is 256 and is similar to other cotton growing areas, *e.g.*, Broach in the Bombay Presidency and the Maratha Valley districts in the Central Provinces and Berar. The Narmada valley besides is much cut up by ravines and therefore unfavourable to settlement. On the other hand the enormous extension of cotton cultivation and the high prices ruling must have added to the wealth and enterprize of the people, and thereby brought relief to the pressure on the means of subsistence. In addition the tract contains the old towns of Dabhoi and Sinore. Besides being distributory centres these towns also contain old established trading

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communities whose wealth must have helped to swell the number and proportion of houses "above comfort." In regard to the Trans Sabarmati area, the correspondence between density and comfort of houses is disturbed still more rudely than in Kahnam. It has a fairly-high density 239, but in point of comfort of house-room ranks last but one. The explanation is found in the composition of the people of this area. In the greater part of this region Kolis abound and the only other type of agriculturist is the Anjana and Kadwa Kanbi, whose ideas of living are not far removed from the Kolis. Vakal is next to Charotar, the most densely populated part of the State, but it ranks fifth in regard to standard of house-room. The main reason for this circumstance is no doubt that in this area there are only two towns, Padra and Makarpura, of which the latter is only a town in name. Kahnam, Rasti, Charotar, and East Kadi, on the other hand have all large and old-established towns, and these help to swell their standards of comfort. The standard of house-room is then mainly determined by the character, aptitudes and economic circumstances of the population, and secondly by the presence or otherwise of large towns. In so far as these influence density, to that extent there is correspondence between it and the standard of comfort.

PART II

Movement of Population, 1872-1921

38. What is Movement of Population?—In the first section of this chapter, we have discussed the figures as disclosed on the night of the Census. We will now consider the movement of population generally since 1872, when the first regular Census of the modern type was taken, and with particular reference to the last decade 1911-1921. The term "Movement of Population" is here taken to mean changes in the population from time to time, as affected by the conjoint influence of births and deaths on the one hand and of migration of people on the other. The literal sense of "movement", *i.e.*, of physical movements from place to place will be reserved for detailed treatment in Chapter III. The main statistical material for this section is contained in the Imperial Table II and the corresponding Table II in the State Tables Volume, with the proportional figures deduced therefrom, supplemented by various items of tabulated information collected from many sources, which are too numerous to mention here, but which will be duly referred to at their proper context.

39. Movements of Population—ante 1872—But before the discussion of Census variation since 1872 is taken in hand, it will not be out of place to refer to the different *Khane-sumaris* undertaken no doubt for fiscal reasons before the Census era. Rao Bahadur Govindbhai in his Report on the last Census mentioned Brigg's estimate of 1849, as being the mean of varying estimates supplied to him by different officials. According to that estimate the population of the State was stated to be 2,250,000 in 1849. This seems too high for that time. Mr. Govindbhai does not mention what these estimates were on which Briggs relied, but summarily dismisses them as very unreliable, on the assumption that none of them were based on an actual counting of the people. The present records unfortunately do not give us any clue to the methods employed in the preparation of these estimates. I have had access however to the records in connection with two particular Censuses—one taken in 1856 and another in 1860 ; and I have no hesitation in stating that these Censuses gave far more accurate results than Brigg's figures. Of these the former seems more detailed and attempts to give a broad idea of the age-constitution of the people. In regard to both these Censuses, it must be admitted however that their estimates of the City population are far from the truth. In 1856 the City of Baroda was supposed to have 168,915 males and 127,830 females, or a total population of 296,745. In 1860, the figures rose to 305,655 ; while in the regular Census of 1872, the City's population was found to be only 116,274. Probably the fact that these estimates had a fiscal aim must have militated against accuracy of enumeration, and no where more so than in the City, especially when we remember that in those days, the caste organisations and the City Mahajan must have been far more powerful than now ; the State machinery of enumeration was correspondingly defective ; so that the strength of the one and the lack of the other must have combined to thwart the pioneer statistician of these days. But if the City estimates was so grievously mistaken, it cannot be said that in the other parts of the State, the estimates were equally defective. The 1856 and 1860 Censuses may be compared side by side with the regular general Census of 1872 in the marginal Table. For facility of comparison, the figures for the City (for the above reasons), and for Okha

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Year	Baroda and Kadi	Amreli	Navsari	Total
1856—Total persons	1,078,228	113,237	198,457	1,389,922
Adult Males 15 years and over ..	356,380	35,208	63,837	455,425
Young Males under 15 ..	231,534	23,973	39,824	295,331
Adult Females 12 years and over.	330,912	31,091	63,093	425,096
Young Females under 12 years.	159,402	22,965	31,703	214,070
1860—Total persons	1,105,024	115,871	199,752	1,420,647
Males ..	609,060	61,215	104,661	774,936
Females ..	495,964	54,656	95,091	645,711
1872—Total persons	1,486,227	141,533	241,255	1,869,015
Males ..	788,721	74,173	123,248	986,142
Females ..	697,506	67,360	118,007	882,873

mandal have been omitted in the calculation. The figures for Okhamandal were not ready apparently when the table was prepared in 1856, and the quaint remark was made that estimates had been made from information supplied by "a vakil with local experience." In regard to both these early Censuses, the tables are called "ganatri patraks." In regard to Baroda City and Okhamandal, they are careful to mention that figures regarding them are estimates merely (andaji patrak) and not from *Khane Sumari*. Finally there is a column for houses ; but it does not appear that the total population was deduced either in 1856 and 1860, from any assumed frequency distribution of so many persons per house. For instance, Navsari Division is credited with 39,061 houses to 198,457 persons in 1856 ; and Amreli had 28,410 houses to 113,237 persons. In either case it is patent that no constant ratio between houses and population could have been assumed. We must, therefore, accept these two Censuses as fairly trustworthy estimates based almost certainly on some kind of actual counting, praiseworthy for their time. In certain cases the tables go into greater details. The patrak prepared by the Vijapur Kamavisdar for one of these Censuses, for instance, gives an elaborate village-register showing population per village, and its distribution by sex, age, caste and religion. Even an earlier Census than these, taken in 1841 gives the population of Amreli with Okhamandal for that year as 56,770 persons. No further details are available of this Census.*

40. Movements of Population in the Census era—We now come to deal with the variations in population from 1872, the date of the first general Census taken throughout the State. The preceding Census Reports have dealt in detail with the causes that have influenced the changes in population from decade to decade. We are more particularly concerned with the last decade, 1911-1921, but to understand the general movement as a whole, it will be necessary to recapitulate very briefly the circumstances of the preceding decades. The marginal table gives a bird's eye view of the movements of population during the last 49 years. The net increase since 1872 is, as will be found from the last column of the table, only 6·5 per cent. during the whole period. We will next examine how far these variations are real or apparent. The real increase or decrease in population of a tract is generally obscured by one or both of two factors, namely, changes in the Census area, and varying degrees in accuracy of enumeration. The first point need

Variations in Population in Census Area of 1921

Census Year	Population	Increase or decrease		Variation with 1872 as 1,000
		Actual	Per cent	
1872	1,997,598	..	..	1,000
1881	2,182,158	+184,560	+9·24	1,092
1891	2,415,396	+233,238	+10·69	1,219
1901	1,952,692	—462,704	—19·15	978
1911	2,032,798	+80,106	+4·1	1,028
1921	2,126,522	+93,724	+4·6	1,065

*There is no reason to suppose that Censuses are foreign to Hindu States. Even as far back as the times of the Kautiliyan polity, we find in existence an elaborate organisation with a hierarchy of officials, not only for the registration of births and deaths, but also for statistics of market produce, family budgets of representative castes, classification of tenements, Census of livestock and finally a general Census based on actual counting of the inhabitants, distributed by age, caste, occupation and even character (Charitra). We learn from the Arthasastra that in Chandra Gupta's empire, the bureau of Census had two divisions, one dealing with cities and towns, and another with the country. The Country department was under the Samahart, who combined several important functions such as that of collection of revenue with the organisation of Census. Under him worked what may be called District officers, Sthaniks, with pradeshtas (inspectors) and gopas (local officials) similarly working under each Sthanik. The City Censuses were undertaken in each City by the local Nagarak assisted by gopas of different degrees varying according as they had charge of 40, 20 or 10 households. (*Vide* Arthasastra, Shama Sastri's Translation, Bk. II pp. 141 et seq.; Narendra Nath Law's Studies in Ancient Indian Polity, Vol. I. pp. 106-116.)

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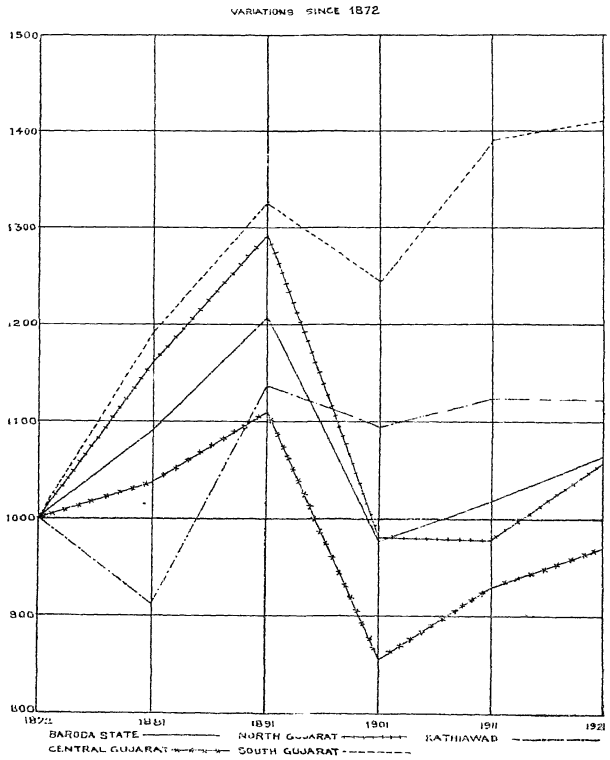

not detain us long ; as since 1891, the Census area has been identical, while for the Censuses of 1881, and 1872, the adjustments that had to be made in consequence of the transfer of Chandod to the Rewa-kantha, and of Prabhas and Prachi to the Kathiawad agencies, and of the subsequent raising of Deesa and Manekwada Contingent Camps, were very slight indeed. The actual population censused on the then areas in 1872 and 1881 were 2,000,225 and 2,180,311 respectively ; so that the adjustments do not amount to more than 0·1 per cent. for each of those censal years. The second factor of accuracy of record will be considered more in detail presently, but in the meanwhile it is important to remember that inaccuracies of record are more in the direction of under-enumeration than over-enumeration, and that such inaccuracies are in respect of the first two censuses far more than in subsequent censuses. The Census organisation may be said to have been brought to completion by 1891 ; and there has been little to choose in respect of accuracy between the Census of that year and subsequent censuses. So whatever adjustments will have to be made on that score will have reference only to the Census of 1872 and in a smaller degree to that of 1881. In judging of the net result of the movement of population during the whole period, it will be safe to assume that the increase is rather less than 6·5 per cent. which is what the figures alone tell us. Bearing this point in mind, the above diagram may be studied. It has been plotted on the basis of figures of 1872, taken as 1,000.

41. Conditions of the Period, 1872-1921—These variations can be understood only by reference to the general conditions, both physical and economic, that have operated in different ways in different parts of the State. The previous Reports discuss these in detail, and it is not possible to go over them again, but for

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facility of reference the accompanying illustrative Chart is given which may be studied with advantage. This Chart is highly instructive and enables us to understand how the net increase since 1872 has not been uniform in all the divisions. In Subsidiary Table III, we learn that with the exception of Central Gujarat with the City, which has been showing progressive decrease since 1891, all the divisions of the State show increases: South Gujarat shows no less than 41 per cent. in 49 years; in Kathiawad, there is an increase of 12·3 per cent. North Gujarat shows an increase of 6 per cent. which is just below the mean rate of increase in the State as a whole. The Chart shows us one striking thing: that in comparison with other parts of the State, South Gujarat has been comparatively free from afflictions both physical and economic. This no doubt mainly accounts for the large increase in that division, although the factor of under-enumeration in 1872 has also to be considered. Central Gujarat has been rather better off economically than North Gujarat, but the net variation during the period shows a decrease of 5·3 per cent. We shall reserve consideration of the City figures till the next Chapter; and if we exclude them from the Central Gujarat total, we find the decrease reduced to 2·9. The period of 1872-1921 may be divided into two unequal halves—the earlier, 1872-1897, consisting of copious years of rainfall and comparative plenty generally for the State; and a later period, 1898-1921, scarred by many famines and years of acute economic distress and high mortality. In regard to the Central Division, however, the first half was more unkind than to almost any other division in the Raj, except Kathiawad. On the other hand the Northern Division made the most of these prosperous years and increased enormously in population. During the latter portion of the period, the year 1900 stands out prominently as an unforgettable landmark. All parts of the State suffered grievously in population particularly the Northern and Central Divisions. Since then, Central Gujarat has been rather better off and has made more leeway comparatively than the Northern Division, but as the first two decades showed only small increases, the increases in the last two Censuses were not enough to make up for the big deficit of 1901; and the net result therefore shows a small deficit compared to 1872. Kathiawad has been perhaps the hardest-hit of all the divisions. The Chart shows, out of these 49 years under consideration, seven famine years, one of acute scarcity, five of deficient rainfall, four of heavy mortality and two of acute economic distress in that Division. One would therefore expect a decrease from the figures of 1872. There is however a net increase of 12·3 per cent. This increase is due to two main causes: Kathiawad is one of the outlying tracts in the State; and the machinery of enumeration even now cannot be so well supervised there as in other parts of the State. It must have been particularly defective in 1872. The Census Report of 1881 in accounting for the decrease in the population of this division since 1872 set up "uncertainty about the correctness of the figures for 1872" as one of the causes. But surely inaccuracies of record in one Census cannot account for a decrease in a subsequent Census assumed to be correcter. In the same report, the abnormal *increase* in the Navsari *Prant* is put down curiously enough to inaccurate enumeration in 1872 among other reasons. The net increase in Kathiawad therefore must be due to a certain extent to under-enumeration in 1872. The other factor to be considered is migration which is undoubtedly in favour of this *prant*, as against the rest of Kathiawad. Although it is the least favoured tract in the State, the Gaekwad's Kathiawad is a kind of land of promise to the surrounding territory, in view of the more settled conditions and the humaner fiscal burdens in existence there. This last cause, which is part of the real movement of population, irrespective of the factor of under-enumeration, has served to make up for whatever losses the tract may have suffered in population through famines and epidemics.

42. Inaccuracies in Censuses of 1872 and 1881—The factor of under-enumeration may be now studied a little more closely in the State as a whole. As omissions figure far more than reduplications in census errors, the net result is always under-enumeration. As has been pointed out before, this factor need only be considered with reference to the censuses of 1872 and 1881 only. Taking the 1891 figures as correct, we have to consider how far the preceding censuses fell short of the truth. I regret none of the previous reports had adequately gauged the operation of this factor or tried to find out how far the real movement of population had been obscured by it. The Reports of 1881 and 1891 merely mention it as one of the causes of the variations. Subsequent reports accept the figures apparently without question. At this distance of time it is not possible to find out how far the first two Censuses were accurate. But that machinery of en-

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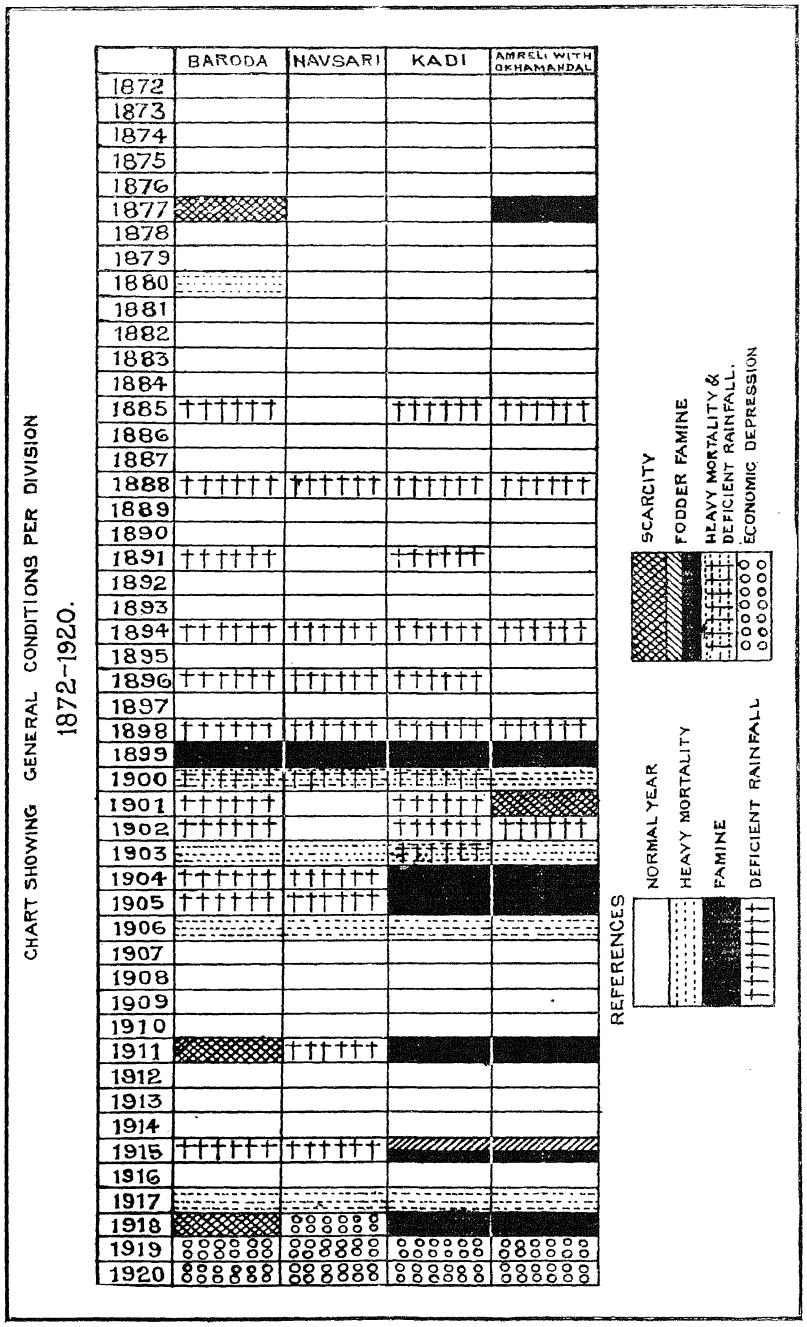

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umeration was defective compared to 1891 cannot be denied. From the administrative section of the Report of 1881, one learns that in 1872 and even in 1881, one enumerator per four or more blocks was a common, and in some parts a normal, feature of the Census organisation. The communications were then few and difficult; in the jungle areas, anything like a synchronous Census could not have been possible in those days. To add to these difficulties, a disastrous fire on the Census day in 1872 in the City must have considerably dislocated its machinery of enumeration. In other parts of India, notably in Bengal and Burma, attempts were made to gauge the extent of errors of record. Mr. (now Sir Edward) Gait in discussing the movement of population in Bengal almost entirely ignored the Census of 1872, and started with 1881. Even the Census of 1881, he did not accept fully. After elaborate local enquiries he assumed that roughly a half million or about 10 per cent. of the total increase in 1891 should represent the number of omissions in the Census record of 1881. The ratio of omissions would thus amount to about 1·3 per cent. of the censused population of Bengal in 1881. In Burma, Mr. Morgan Webb calculated from actuarial estimates that the Census figures for 1891 were out by about 2·8 per cent. For 1881, he assumed a similar percentage of error, and for 1872, he believed that the degree was much greater. The mistakes in Burma were ascribed to the extension of Census-work to newly settled areas. We have for our part no data to estimate the extent of errors in these early Censuses in this State but we may assume that in regard to accuracy of record, this State did not fare better than Bengal at any rate. The crude increase shewn in 1891 over the figures of 1881 was 233,238. 10 per cent. of this, following the Bengal method, would give 24,000 in round numbers, or about 1·1 per cent. as the number of omissions in the Census of 1881. On this basis the true population would figure at 2,206,158 for that year. The omissions would roughly amount to two per each of the 12,000 blocks in the State. For 1872, the problem becomes more difficult. Both in Bengal and Burma, no estimate seems to have been made. If we assume the mistakes in 1872 to be double the number of 1881, even then the percentage of under-enumeration would work out to only 2·4 of the Census figures of 1872 and point to a degree of accuracy which would be higher than what obtained in Burma two decades later. Personally I am inclined to favour a round 50,000 which would mean roughly about fifty omissions per 12 blocks or a circle in 1872. This is a conservative estimate, but in the absence of any reliable data, it will have to do. These errors are mostly to be expected in South Gujarat and Kathiawad in view of their forest areas and the dispersed character of their mahals. Distributing these errors among the divisions in the scale of 5 for the Southern, 3 for Kathiawad, and one each for the Central and Southern Divisions, per 10 errors, we get as in the margin the deduced population of the divisions in 1872 and the net variation in 1921. Thus if we accept a margin of error somewhat similar to the Burma rate for 1891, we get a real increase in population for the whole State of only 3·9 instead of 6·5, the crude rate of variation. The Kathiawad rate of increase is also reduced from 12·3 to only 2·6; and South Gujarat similarly has a reduced increase of 27·8 in the place of 41. The Central Gujarat figures include those of the City. If we assume the City figures for 1872 to be approximately correct, then the whole of the 5,000 errors allocated for this division will go to the District area. The net variation for Baroda district area will then be—3·7 instead of—2·9, the ratio arrived at from crude figures.

Division	Deduced population in 1872	Variation per cent. 1872-1921
Central ..	752,437	—5.97
Northern ..	855,325	+5.3
Southern ..	266,255	+27.8
Kathiawad ..	173,581	+2.6
Total ..	2,047,598	+3.9

43. An Estimate of the Normal Rate of Natural Increase—The above table proves the importance of deducing the corrected population from the crude Census figures of 1872, in order that the real movement may be helped to come to view. But if adjustments were necessary in 1872, they are even more so for 1881, at least for the whole State, for that year happened to start a decade of prosperous years, the like of which has not befallen the State since. The rainfall was fairly propitious throughout, being only slightly in defect in 1885 and 1887; famines became a thing of the past and deaths ruled low. All the influences that favour the growth of population were fully operative. The chart itself shows a comparatively clean record. Subsequent Statisticians have agreed to hark back to this happy period somewhat wistfully as the normal decade. It is very important therefore to find out the correct population of the State at the beginning of the decade, so that the real movement at the end can be ascertained. The increase or decrease of population

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in any tract at the end of a decade is the result of a combination of two forces,—*i.e.* by the difference between births and deaths and the balance of migration. What results from the operation of births and deaths alone is called the natural variation. This can be arrived at by isolating the second factor. It will be useful to find out the natural rate of increase in the normal decade. The migrations are generally studied from the figures showing birth place. People born outside the State, but enumerated within it, may be correctly regarded as immigrants, while those born in the State but enumerated elsewhere are similarly emigrants, on the assumption that spurious migrants of both kinds cancel each other. In the decade 1881-1891, immigrants numbered 303,600 at the beginning and 311,922 at the end. Emigrants in 1891 were shewn as 252,396. In 1881, complete figures of these were not available; but approximately they were estimated to number 228,000. Thus both show increase during the decade. But the problem is to find out how many immigrants came, and emigrants went out, during the decade. There are various methods of estimating this—the Longstaff Method is well-known. It takes the average of the migration during the decade and, subjecting it to some assumed rate of mortality, adds the result to the Census increase. The Bengal method is somewhat similar—it subjects the migrants at the commencement of the decade to the normal mortality. Then it takes the Census increase and deduces therefrom the number of migrants assuming them to come (or go) in equal annual waves and subjected to the normal rate of mortality. The method adopted in this report is somewhat simpler and claims to be more correct.* According to this method, the two sets of figures (for immigration and emigration) at the beginning and the end are taken, the progressive rate of variation per unit migrant is calculated therefrom for each year as well as for the ten years (*i.e.*, R^{10} and R are first found). Then the incidence of deaths is isolated by the use of a simple formula, $ax \frac{R^{10}-1}{R-1}$ where a is the assumed rate of mortality, and x is the number of migrants at the beginning of the decade. We find thereby the number of deaths amongst the migrants. This is deducted from the migrants of the first year of the decade; and the difference between the remainder and the migrants at the end of the decade gives the number of migrants during the decade. It must be remembered in regard to each of these three methods, that calculations are necessary separately for immigrants and emigrants. Adopting this formula and assuming a mortality of 35 † per mille per annum we get 116,157 immigrants and 107,915 emigrants during the decade, 1881-1891. The net result is a slight gain to this State of 8,242 persons at the end of the decade.

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* The method adopted here has the sanction of Prof. L. S. Vaidyanathan, A.I.A., the Actuary who has prepared the Life Table for the State. It makes full allowance for the influence of deaths on the Census increase, which the Longstaff Method does not; and it subjects the migrants at the beginning of the decade to a progressive mortality which the Bengal method omits to do. For a description of the Bengal method, see p. 102 of Bengal Census Report of 1911. The Longstaff method is worked out in p. 40 of Longstaff's *Studies in Statistics.*

† The mean expectation of life has been calculated to be 22·67 years, which would give @ 1,000 ÷ 22·67 a death rate of 44·11 per mille per annum. This death-rate is the mean of different death-rates for different age-groups. The age-distribution of the actual population and that of immigrants (which has been specially compiled for this State) may be compared with advantage. The following table illustrates why the 35 per mille rate has been assumed for migrants :—

Average Age distribution of actual population		Age distribution of migrants		Mortality per mille per annum
Age period.	Per cent.	Age group.	Per cent.	
0–5	14·9	0–5	4·9	141·2
5–60	81·0	5–60	88·3	24·8
60 and over.	4·1	60 and over.	6·8	108·4

It will be seen that the middle age group amongst immigrants mounts upto 88 per cent. and thereby lowers the death rate for all ages from 44·4 to somewhere about 35.

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Crude Census returns of 1881	2,182,158
Corrected population of 1881	2,206,158
Population of 1891	2,415,396
Deduct balance of migration at end of decade	8,242
Estimated population through natural increase in 1891	2,407,154
$2,206,158\ (1+r)^{10} =$	2,407,154
$(1+r)^{10} = \frac{2,407,154}{2,206,158} =$	1·0911
$\therefore 1+r = 1·00875 =$	Normal rate of natural increase per unit of population per annum.
Rate of movement (1881-1891) =	1·0948

The margin gives the remainder of the results. The normal rate of natural increase is thus found to be 8·75 per mille per annum. In ten years, by geometrical progression, the rate of natural increase will be 9·11 per cent. It is necessary to bear this rate in mind, because it will help us later on to find out the incidence of disturbing factors such as famine, plague or influenza.

44. Variation in Population, 1891-1901—The year 1891 is statistically important. It marks the highest point in the population curve in the Census era. We have now learnt what the normal rate of natural increase is. If it was allowed to operate in this decade, we should have had in 1901, 2,415,396 × 1·0911 or a population of 2,635,455 persons. If we get rid of the factor of migration by using the formula explained in the preceding paragraph, we find that at the Census year of 1901, there was a net loss of 84,055 persons through emigration since 1891. Adding this to the Census population of 1901, we will get 2,036,747, the result of natural variation through the operation of births and deaths alone. The difference between this figure and the expected population of 2,635,455 represents the loss due to famine and plague. The loss amounts to 598,708 or 24·8 per cent.* of the population of 1891. If we consult the Chart, it will appear that the year 1898 forms the land mark. In 1894, the rainfall was seriously in defect, throughout the divisions, but the conditions nowhere approached the scarcity level of 1898. There was indeed famine in 1877. That year was marked by a heavy famine throughout India, its intensity being felt particularly in two divisions of the State—Baroda and Amreli. But the memory of this famine had by this time become so remote, that the visitation of 1899-1900 found the people quite unprepared. The enormous loss as indicated by the estimate given above left its mark on the age-constitution of the people. Famine and plague both combined to force up the mortality in the earlier age-periods to an appalling extent. A comparison of the age figures shows how the dread famine of 1899-1900 had thinned away the child population of the State.

Population	1901	1891	Variation per cent.
Actual Population ..	1,952,692	2,415,396	—19·15
Immigrants ..	172,931	311,922	..
Emigrants	202,270	252,396	..
Natural Population .	1,982,031	2,355,870	—15·9

Age Period	Percentage of Population		
	1891	1901	1911
0–5	14·2	10·1	15·5
5–60	81·4	86·7	80·5
60 and over	4·4	3·2	4·0

45. Variation in Population, 1901-1911—The history of the next decade is the record of the sequelae of the great famine of 1900. The Chart shows us that in the first half upto 1906, the record continued to be dismal. One lean year followed another until 1906, when though the rains were propitious, a heavy death rate supervened. The first year of this decade saw the largest toll of human lives. In 1903-04, the death-rate, though smaller, was very high. In 1906, the death-rate

Population	1911	1901	Variation per cent.
Actual Population	2,032,798	1,952,692	+4·1
Immigrants ..	222,957	172,931	..
Emigrants ..	235,523	202,270	..
Natural Population	2,045,364	1,982,031	+3·2

* This estimate may be compared with Mr. Dalal's. *Vide* pp. 81-82, Census Report of 1901. Mr. Dalal assumes 10 per cent. as the normal rate of increase without making adjustments for incorrect enumeration of 1881. In his estimate of expected population, he uses the arithmetical method instead of the geometric, which is now generally accepted as the more scientific, and in his calculation of the balance of migration, he does not use any of the methods referred to in this report but simply strikes the crude balance of the birth place figures. Lastly he assumes that the majority of deaths must have occurred within the last two years of the decade and ignores the fact that births may have happened in that time.

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was equally heavy. Plague was the dominating feature of the mortuary returns of this decade—no less than 77,975 deaths from this cause being recorded during 1899-1910. From 1906 till the end of the decade a little respite followed : agricultural conditions showed a tendency to return to the normal and the health of the people improved. The crude balance of migration as given in the above table shows 9,527 in favour of this State in this respect. Applying our formula, we get 117,894 immigrants set against 109,119 emigrants within these ten years. The net balance would thus appear to be 8,775 in favour of this State ; but even this slight balance is reduced to about 5,000 when we deduct 3,555 persons who were reported by the local authorities to have migrated from this State to places outside India before the Census date of 1911. The total natural increase in this decade is therefore 75,100 or 3·8 per cent. The marginal table gives the estimate of the expected population by the normal rate of natural increase, and the actual population of 1911 with the migration factor isolated. We see a net deficit of 102,790, which should be ascribed mainly to plague and cholera. The recorded figures of deaths from these two causes were not much below this number.*

Population 1901	=	1,952,692
,, × R^{10}	=	Expected population in 1911 by normal rate of natural increase
	=	2,130,590
Actual Population 1911 by natural increase	=	2,027,800
Net deficit	=	102,790
Recorded deaths from plague and cholera	=	76,909

46. Condition of the Decade, 1911-20—We now come to the period with which we are chiefly concerned. But before we attempt to analyse the figures of variation in this decade, the general physical, agricultural and economic conditions obtaining in this period must be succinctly set out, in so far as they have a bearing on the real movement of the population.

1911-17—The decade opened inauspiciously with a frost. To quote the Famine Commissioner's report of that year, " The evening of January, 31st, at once crisp and cold, found vast fields of corn waving cheerfully under a piercing north-eastern wind ; next day came the frost and the 1st of February awoke to see the blades of ripening corn blighted and chilled. Seas of smiling cotton and prosperous tobacco of the night before gave place to crumbling stumps of shrivelled shrubs and shapeless stalks." This disaster on the eve of the Census was not however foreshadowed by the monsoon immediately preceding. It was on the whole satisfactory : the rainfall indeed was higher than the decennial average, and the agricultural conditions were good. The frost did undoubted damage in Kadi and Baroda Divisions, and the outturn of crops was poorer than the normal in consequence. But cotton fetched high prices and the cultivator was enabled to tide over the temporary misfortune and to wait hopefully for the next rains. The monsoon of 1911 however did not bring relief to them. After the early showers in the middle of June, the succeeding months went rainless. The defect was most apparent in Kadi *Prant,* where the total rain was less than one-fourth of the last five years' average, and in Kathiawad, where the conditions were serious, Okha mandal having only two inches. Navsari was safe, but the Baroda *Prant* north of Kahnam, suffered privations. Charotar and Chorashi saw their rice crop blighted and the rich tobacco-growing area failed also ; West Kadi was the first to feel the pinch. And it was here that the famine conditions produced a little movement of population. A rough census taken in November, 1911, showed that 17,334 persons had emigrated since the census from the four talukas of West Kadi to Bombay, Ahmedabad and as far afield as Sindh in quest of labour. Some crossed the Saraswati and the Banas to Kankrej. Kathiawad showed little trace of this emigration. On the other hand, the surrounding territory being in a still more parlous condition, immigrants flowed into our territories in search of shelter and relief. The difficulties

*The 1911 Report mentions (p. 31) 77,975 deaths from 1899-1911. Deducting the plague deaths for 1899 and 1900, we get 71,428 deaths for the last decade. Cholera claimed an additional toll of 5,481 lives.

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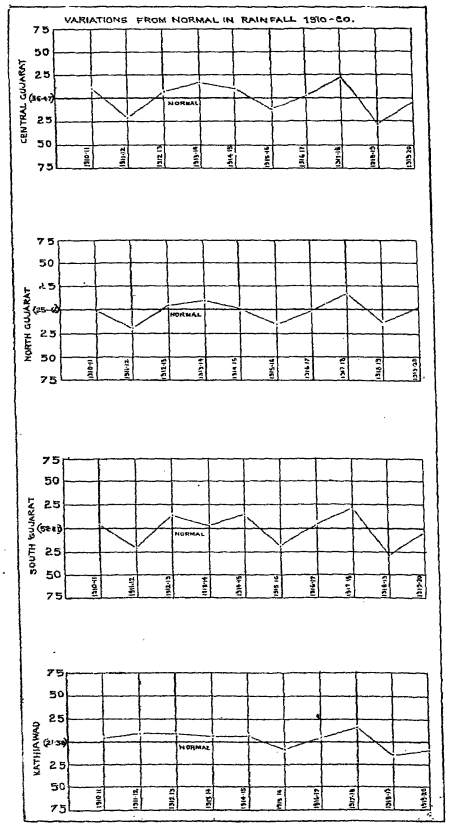
about fodder led to serious loss of life amongst the cattle of these two divisions. As a matter of fact their number at the beginning of the monsoon of 1912 was found to be exactly decimated, the ratio of mortality being 110 per mille and the accession by births being only about 10 per thousand. In this respect, the loss of milch-cattle was more serious than that of plough-cattle. Had the State not undertaken promptly the supply of grass on a huge scale, the loss in the live-stock would have left a permanent mark on agriculture. Timely rains in June and July 1912, however, helped to retrieve the situation. Rainfall conditions continued fairly normal in the following years until the monsoon of 1915, when again the shadow of famine crossed the land. June saw a sufficiency of rain in all the districts, but in practically the whole of July, August and part of September, the rains held off in Kadi, Amreli and Okhamandal *Prants*. A serious prospect ensued for the feeding of cattle, on account of the threatened deficit in grass. This situation forced up the price of grass from about 5 or 6 Rs. per 1,000 lbs. to Rs. 30 or even higher. Extensive grass operations had therefore to be undertaken by the State. Depots were opened at Mahal headquarters in the Kadi *Prant*, where grass was sold at the comparatively cheap price of Rs. 12·8 per 1,000 lbs., the State meeting the difference between the purchase price and the proceeds of the sale. From the middle of September, well on to October, there was general rain, which "enabled", to quote from the Administration Report of that year, "the cultivators to sow their fields and raise juwar, wheat, gram, rape-seed, oil-seeds and other crops to some extent. The inflated prices of fodder suddenly came down and the fear of the people for a dire famine were removed. Food supply was ample in all the talukas, and the prices of cereals were normal. This was mainly due to the juwar crop raised with the help of the later rains, and the import from Cawnpore and other places of Bajri and pulses. Juwar, which is usually exported to Arabia remained in the district owing to the Great War, and its selling price was consequently lower by four to six annas as compared to that of the preceding year. There was sufficient work available for those in need and there was no perceptible increase in crime. No beggars were found wandering about aimlessly and but for the brisk demand for grass, it did not appear that there was anything unusual in the year." The monsoon of 1916 passed off normally enough. In 1917, however, there were indications of a wet famine, the rainfall was heavy, being about 20 inches in excess in the Northern, Central and Southern Divisions and 13 inches in excess in Kathiawad. The Great War continued to dominate the economic situation. There was an abnormal rise in the prices of food stuffs and other necessities of life. The heavy rainfall was responsible for the spoiling of a great part of the *kharif* crop of that year. It particularly hit *bajri*, the people's staple, and to a certain extent cotton. To add to the difficulties of the people, plague reap-



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peared in a virulent form and carried off 27,460 persons. The death rate was again heavy, the rate of recorded deaths being 40 per mille of the population.

1918-20—The next year was still more unfavourable. The few showers that fell in May and June of 1918 were mostly in Navsari *Prant*. In other parts, the sowings were delayed in consequence. In July, the rainfall was better but badly distributed. There was fairly good rain in August, but September and October were almost rainless. Okhamandal had not even an inch. Baroda *Prant* was 32 inches in defect (compared to the normal), Amreli and Kadi were each a little under 20 inches in defect, and even Navsari, which is usually lucky, was 23 inches in defect. Crops failed in all districts except Navsari. Cotton fared a little better, and *bajri* in some places, but in Okhamandal even *bajri* was destroyed. The wet famine of the previous year had already caused a shrinkage in the yield. The failure of crops in 1918-19 intensified the shortage of food-stuffs and the price-curve rose even steeper in consequence. Fodder was also seriously threatened by these circumstances. The supply of potable water was however ample, as the heavy rains of the preceding monsoon had filled the wells and water courses. From September to November of this memorable year, one other calamity more disastrous than the famine was added to the misfortunes of the people. In common with the rest of India, this State was ravaged by the influenza pandemic. Its toll is sufficiently indicated by the recorded number of 71,472 deaths. The reported death rate for that year was 62·9 per mille for males and 64·1 per mille for females. The cumulative effect of these afflictions as disclosed in the recent Census may not look as serious as that of the great Famine of 1899-1900, but that this was so was more on account of the greater preparedness of the people, stiffened by a series of misfortunes, to bear these sacrifices, their greater foresight and resourcefulness, in a word, to a more organised economic environment, than to anything else. In fact I am inclined to think that in its widespread intensity the distress of 1918 was almost as bad as 1900. That this disastrous year did not have the effect that afflictions of similar magnitude have had on population in previous years shows how scarcity-conditions—and even famine—have ceased to have their demological importance of earlier days. The improvement in the means of communications and in the level of general intelligence and of foresight has led to this that famines have ceased to kill people. They may affect vitality to the extent of causing a little shrinkage in birth-rate and affecting the age-distribution of the people; but they do little else. Resuming our narration, we see in the two closing years of the decade few relieving features. In 1919, the monsoon was indeed fairly normal. The rains were slightly in defect in Navsari and Baroda *Prants*; but in Amreli and Okhamandal, the amount approached the normal and in Kadi the total seasonal precipitation was a little above the normal. But the rainfall was unevenly distributed. The late rains in November spoiled the standing and harvested crops of the *kharif* season. Baroda and Navsari, besides, received heavy rains in January 1920 which did no small damage to the tobacco and juwar crops. A little later, frost did damage to castor and cotton in Amreli and Kadi. The monsoon of 1920, again, was not very favourable. In Baroda *Prant*, the rainfall was below the decennial average by over 13 inches. In Kadi and Okhamandal, the defect was proportionately larger. In Navsari only 39 inches, instead of the usual 53, fell. These circumstances however did not lead to much diminution in the yield of crops, although scarcity conditions continued unabated. The prices of necessities and food-stuffs though a little easier than in the previous year, continued high. The wages of labour also became high, as a consequence mainly of the world-crisis in money brought about by the world-war; the shrinkage of labour caused by influenza and plague must have also contributed to the raising of its wage-level. Imperial Table XVII gives the figures of agricultural labourers. In the margin actual workers in the two Censuses are compared. There is a large decrease amongst them in the present year. Even taking the population supported by agricultural labour, we find the number has decreased from 313,479 to 295,815.

	1911	1921
Agricultural labourers (actual workers only) ..	201,224	179,271

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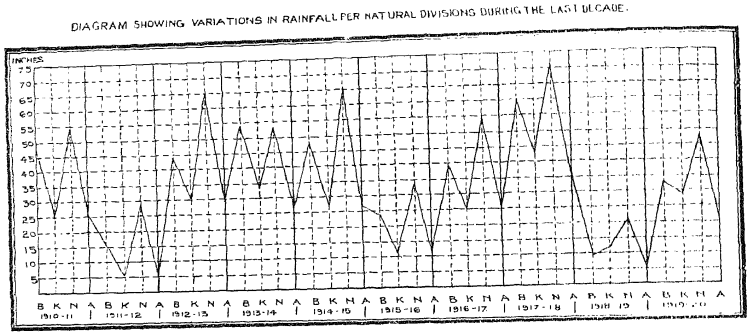
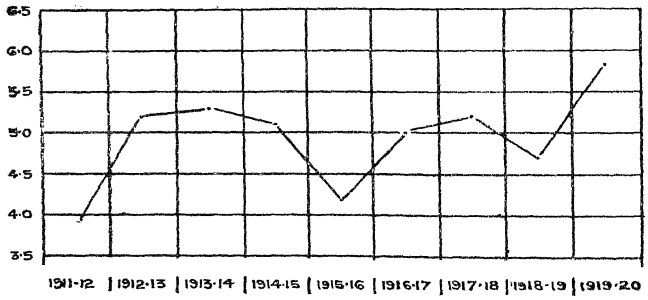
47. Diagrams showing Correlation between Rainfall and Sown Area—Two diagrams are here given, one showing variations in rainfall

DIAGRAM SHOWING VARIATIONS IN RAINFALL PER NATURAL DIVISIONS DURING THE LAST DECADE.



per natural division during the period, and another showing the net area sown

NET AREA SOWN WITH CROPS
(IN MILLIONS OF BIGHAS)



with crops. Both are instructive as they show how closely increase or decrease in the sown area corresponded with the vagaries of the monsoon.

48. Rainfall, Food and Non-food Crops—The history of the last twenty years would show slight though perceptible decrease in rainfall since 1881. This steady diminution is seen throughout the State and particularly in the three *prants* of Navsari, Baroda and Kadi. The following table gives the decennial averages since 1881. The figures for 1881 must have been calculated on very imperfect data, but the later figures are instructive.

Variation in Decennial Averages in Rainfall, 1881-1921 (in inches.)

Division	1881 Estimated Normal	1882–91	1891–1901	1901–11	1911–21
Navsari	58	53·9	51·9	45·30	48·02
Baroda	37·3	37·9	38·1	31·47	35·27
Kadi	32	30·1	27·4	25·10	23·99
Amreli with Okhamandal	21·4	22·3	21·6	19·3	20·29

The frequent recurrence of lean years during the latter half of the Census era must have led to the bringing down of the rainfall average. There is besides a change noticeable in the course of the seasons. June does not appear to have so much rain as in the former years ; and the distribution seems also much more uneven than formerly. Whatever the cause, the cultivator no longer relies on the

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rain and betakes himself more and more to the kind of crop which besides being profitable is comparatively the least dependent on rain. It is not therefore merely anti-social reasons—the selfish motive for gain—that prompt the ryot to leave the food crops more and more to the margin of cultivation and to have recourse to an increasing extent to cotton. The area sown with cotton has gone on increasing until in 1917 the cotton area was roughly about 400 square miles more in extent than in 1890. The proportional figures in the marginal table do not show the extent of the increase so strikingly as the absolute figures would have done ; because the sown area has also increased, *pari passu* with the extension of cultivation. The proportion of the area sown with food crops, it may be noticed, has also shrunk correspondingly. As more land is declared fit and leased for cultivation, the tendency is to relegate the foodcrops more and more to these marginal areas, reserving the better soils to cotton and other more commercial crops for preference. The subject will be more closely studied in Chapter XII, but in the meanwhile it is interesting to know that in 1919-20, the total produce of food crops amounted to 5·27 maunds* per person in the State. Similar figures for non-food crops (cotton, tobacco, sugarcane, oilseeds,etc.) give a proportion of 3·27 maunds per person for that year. In 1910-11, on the other hand, the food crops yielded no less than 11·8 maunds per person, while the non-food yield was only 2·45†. These figures are obtained from the annual reports furnished by the Subas (Collectors) to the Revenue Department. The crop estimates by themselves are not very reliable, but at the same time the margin of error must at least be the same in 1911 as in 1920 ; and the conclusion that the figures point to a marked and serious shrinkage in the volume of food-produce in the State may be accepted without reservation. The Famine Commission of 1878 determined the minimum food required for sustenance of an average male to be 10·26 maunds per annum. To take a later estimate, Mrs. Anne G. Strong, Director of Household Arts, in her paper on "The Cost of Living in Baroda, 1920," in *The Indian Journal of Sociology*, ascertained the standard diet (vegetarian) for an individual clerk ;—the maximum was fixed at 40 seers of food products (Rice, wheat, etc.) per month, and for the standard minimum for the same class of person, 32 seers were deemed necessary. Even if we take this minimum to be obtaining generally in the State, 32×12 or 384 seers (9·6 maunds) per person will be at least the food supply required for the year. Thus the general position as disclosed by the figures seems to be that, while in 1910 this State was self-sufficing in regard to the main articles of its diet, in 1921 it has to look elsewhere to the extent of about a half of its requirements in food. The failure of successive monsoons has no doubt contributed very largely to this result. And this deficiency in rainfall points to the need of irrigation and of concerting measures whereby the consequences of a bad season may be obviated.

Year	Proportion of cultivated area sown with	
	Cotton	Food crops
1881-90 (Average) ..	20·7	68·0
1891-1900 (Average) ..	21·7	68·0
1904	24·7	64·5
1917	27·4	62·2
1920	25·6	55·9

49. Irrigation in the Decade—Irrigation in this State of the indigenous type is chiefly carried on with wells and to a smaller extent by paddy tanks, of which the Navsari *Prant* has the largest number. The wells for agricultural use numbered 61,953 in 1920, of which 47,085 were pucca structures. The irrigation tanks of the indigenous variety numbered 557 in 1920, of which no less than 322 were found in the Navsari *Prant*. The difficulty with irrigation in this State is that, although streams abound, very few have a perennial flow or at any rate have water flowing at a level which would enable it to be carried by canals to the land. As a result most of these tanks are in disrepair. The irrigation works constructed by the State consist of *bandharas* or weirs across water-courses with channels to lead the impounded water to the fields. They also include a number of tanks with distributory channels. Some of these large works have not been very successful owing to the frequency of famines in recent years as also to the incompleteness of the projects themselves. The lean years since 1901 have been utilised for the pushing forward of irrigation works

*A maund is taken here to mean 40 lbs., or Kachcha seers.

†In regard to these figures of yield, it is interesting to note that the maximum number of maunds which a *Bigha* is capable of turning out may be estimated at : black soil, rice 35 maunds, *Kodra* 28, cotton 10, wheat 10, *Juwar* 12 ; Gorat Soil, tobacco 25, *bajri* 20. *Gazetteer of Bombay Presidency* (1883), Vol. VII, Baroda, p. 83.

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to prepare to remove to healthier surroundings. But the widespread suffering that it caused almost in every home created an immense upheaval of feeling in the direction of organised relief and social service, so unique in the history of this State that it deserves record in this chronicle. About the middle of September, 1918, influenza assumed an epidemic form. By the 30th the schools had to be closed. A strong relief committee was started with headquarters at the capital. They enlisted the warm sympathies and the active co-operation of an enthusiastic band of volunteers, mainly recruited from the students, including a band of devoted boy scouts organised for social service by a local *akhada* (Gymnasium). Practically the entire body of teachers in the City was turned over by the Education Department to the assistance of this committee and to the organisation of relief generally. By the 15th October, 29 temporary dispensaries and distributory centres were at work in the Capital. A large school building was also turned into an influenza emergency hospital. In the meantime the districts were not idle. Every where the Municipalities and private social service leagues were mobilising workers for relief. "Never in the history of any epidemic in the State" to quote the State Administration Report for 1918-19, "was there such spontaneous and organised movement of all to carry aid to the people in their homes and such a ready response of the people to the relief measures undertaken in their behalf." The educational machinery in the districts as in the capital was also detailed to assist the medical department. By the 27th October, when the epidemic was at its height, the work of relief was in progress in 1,166 towns and villages throughout the State. These 1,166 villages were served from 249 dispensing and distributing centres with travelling boxes containing the stock mixtures. Altogether they dealt with 270,326 cases. Nearly 4,000 teachers were employed in village medical relief. The Seva Mandals of Sidhpur, Patan and Harij to mention a few among many did conspicuously good work. In view of this widespread network of relief and the fact that the relief centres had the opportunity of scrutinising the returns of influenza deaths, I do not think that the number of recorded deaths from this cause is much below the truth. This number (including the deaths from pneumonia) represents 36·1 per mille of the population of 1911. The total mortality rate of influenza for all India has been estimated at 55 per mille. I am inclined to think that the influenza death rate was lower here than the Indian average quoted above. As we shall see later, not more than 125,000 deaths can be ascribed to the disturbing factors of influenza (including pneumonia) and plague. The total recorded deaths from these causes amount to 112,994. Again deaths from fever in 1918 were shewn at 40,331, which seems unduly in excess of the previous normal annual average, which is 35,000. At least half of this excess of 5,000, I am inclined to add to the influenza total, as many influenza cases were undoubtedly wrongly registered as fever. In any event I do not think the total of influenza and pneumonia deaths could have much exceeded 78,000 or 38·4 per mille. The plague total would be roughly 45,000 or 23 per mille.

53. Labour, Prices and Wages—The health conditions of the decade were therefore not at all favourable to the growth of population. One economic consequence was the diminution in the supply of labour and the consequential rise in wages all round. The previous decade, 1901-11, may be described as a period of relatively high wages and low prices. This state of things was by no means unfavourable to the labouring classes and doubtless helped them to stand the stress of lean years. But from 1911 onwards a period ensued when the price curve rose steeper and steeper with each succeeding year. The War added enormously to the people's difficulties. Wages increased also but it is difficult to state how much. In Rao Bahadur Govindbhai's Statistical Atlas which contains information up to 1916, we find agricultural wages compared from 1906 to 1916. In Central Gujarat, wages increased from four annas to 8 annas per day per head during that period. In North Gujarat agricultural wages on the other hand remained stationary at six annas. In South Gujarat, the rise in wages was double, *i.e.*, from 3 annas and six pies to seven annas. In Kathiawad the wage-level shows a slight rise from 4 as. 6 pies in 1906 to 6 as. in 1916. Since that date the monetary crisis which has affected the world has not left this State alone; and labour has demanded, and got, its own terms for the asking. The variations in wages at present do not seem to depend so much on the quality of the soil* or

*But it is significant to note however that in black soil areas, the agricultural wages generally rule lower than in *goradu* tracts.

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the nature of the labour, as on the character of the labourer and his bargaining power. In Charotar and some Vakal villages, the agricultural labourer seems now to get Re. 1-4-0 or even Re. 1-8-0 a day as wages. In Waghodia and Savli, the demand is as low as even four annas. In Songadh and Vyara, the wage level is also low. But in Navsari and Gandevi, the wages range from 12 as. to 1 Re. 4 as. per head. In North Gujarat, the general range is between eight and twelve annas and a rupee at places. In Kathiawad the highest wages are given curiously enough in Okhamandal, where perhaps the scarcity of labour accounts for 12 as. to a rupee being the average rate. Amreli and Kodinar would appear to give the next best wages. These rates are for agricultural labour required for sowing. Artisans like carpenters and blacksmiths show even larger rates of increase. The data in regard to wages are however indefinite. In regard to prices, however, we have more certain knowledge. If we take 1904-8 as the basic period, the rise in the price of nine principal articles of foodstuffs and fuel was nearly double, *i.e.*, 97 per cent. in July 1919. The increases range from 194 per cent. in the case of *juwar*, 178 per cent. in *bajri*, 161 per cent. in *ghee*, 114 per cent. in fuel and 112 per cent. in wheat, to 71 per cent. in regard to rice and 25 per cent. in raw sugar. The variations in prices as separately compared with the price averages of 1904-8 and also with the pre-war prices of 1913-14 each taken at 100 are shown in the marginal table. This abnormal rise in the price of foodstuffs must obviously hit the fixed-wage-earning consumer the hardest of all people ; but it helped to offer the producer some compensation to set off against the rise in the wages of labour.

Year	Variations in general average of prices as compared with	
	1904–8	1913–14
1915 ..	116	101
1916 ..	125	110
1917 ..	121	109
1918 ..	142	127
1919 ..	197	170

54. **Extension of Cultivation : Co-operative Societies**—The marginal table shows that in spite of the stress of these circumstances, the extension of cultivation has gone on steadily since 1901. This increase in occupied areas is seen in all the districts. It will be seen therefore that agriculture has not by any means lost its popularity, although industries are developing to be its serious rival. In the meantime, all the stable elements in the agricultural classes seem to be pooling their resources for certain common ends. In this connection the increase in the strength and capital of co-operative societies is a striking illustration of this growing sense of self-help and foresight. There were only 79 of these societies at work in July 1911, with a membership of 1805 and a total working capital of Rs. 126,567. In July 1920, their number increased to 491 with a membership of 15,800 and a capital of about 24 lacs of rupees. The deposits held by these societies increased from about Rs. 4,000 in 1911 to 10 lacs in 1920. With the expansion of these institutions, their functions have also widened. The present number of societies include 33 non-credit institutions, 2 for milk supply, 6 for irrigation and 25 for fodder storage. These show how the intelligent sections of the peasantry are aiming at not merely the extinguishment of their debts but also the organisation of defence against famines. These were also included in the above total 42 non-agricultural societies of which 5 were for Government servants, 19 for weavers, 5 for chamars and 2 for Antyajas (untouchables generally). The principle of co-operative credit is being extended to other classes who are taking advantage of it to reduce their burden of indebtedness.

Division	Occupied area in bighas (000's omitted)		
	1900	1910	1920
Central Gujarat ..	1,559	1,600	1,738
North Gujarat ..	2,440	2,440	2,638
South Gujarat ..	946	1,039	1,049
Kathiawad	870	986	1,012
Total in bighas ..	*5,815*	*6,074*	*6,437*
,, *in acres* ..	*3,418*	*3,570*	*3,782*

55. **Industrial Development in the Decade**—If agriculture is buckling up its armour, industry is not lagging behind. The handicrafts of the indigenous type, like weaving, dyeing, calico printing, etc., for which certain towns like Patan, Vadnagar, Dabhoi and Petlad were famous are on the decline. But industries of the new type with a modern organisation are increasingly in evidence. Imperial Table XV E of the 1911 Census showed 86 industrial establishments employing 20 persons and over ; these had a labour force of 7,216 men and 2,205 women. Imperial Table XXII of this Census shows 124 establishments of a similar class, em-

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ploying 8,683 men and 2,911 women. The most striking feature of the industrial returns is the increase of factories dealing with textiles and connected industries from 65 in 1911 to 98 in 1921. The dyeing factories increased from 4 to 7 in the decade. Joint Stock Companies have risen in number from 39 in 1911 with a capital of 66 lacs to 88 in 1921 with an authorised capital of over 8 crores. As to the condition of these industries, the Administration Report of 1919-20 writes in a vein of optimism. " All the well-established factories continued to work well and have been expanding. The Cotton Mills were adding more looms and spindles and the Agents of all the successful cotton mills and dyeing factories were starting new industries also. The weak and the struggling were also being rehabilitated." The rehabilitating process took the shape in some cases of changing the management, in others of turning them into joint stock concerns. Some of the hampering conditions against industrial development were being removed towards the end of the decade by an enlightened State policy of encouragement and liberal facilities. Capital is always shy of planting itself in an Indian State, but confidence in the fixity of the laws and regulations and in the stability of the general administration of this State was being sedulously cultivated and developed. A definite industrial policy of investigating raw materials and helping new and important industries was clearly laid down. The close of the war also in 1918 set free a large volume of capital for industrial enterprises. The years 1919 and 1920 were thus marked in this State as well as in India generally by a wave of Industrial revival. These years saw the flotation of no less than 64 joint stock companies in Baroda. Besides the existing cotton mills, schemes for establishing 14 other mills have now been developed. One woollen mill in the City, four sewing thread and hand loom factories for weaving silk (on a large scale) at Kalol, Dehgam and Visnagar, and three oil mills, all in the Kadi *Prant*, were also projected. Besides these, chemical industries were planned (including large alkali works at Dwarka and Velan). A cement factory designed to turn out 90,000 tons of cement annually was established at Dwarka. A sulphuric acid factory was started in the capital. A joint stock concern is being organised to work the salt and lime deposits on the Kathiawad coast. The location of a sugar factory near Vyara, under the auspices of the Tata Sugar Corporation was then considered. Factories for the manufacture of cement Hume pipes at Miyagam and granite and marble working quarries at Bhulwan have been started. None of these projects were however in working order when the Industrial Census was taken last April. It is quite possible that owing to the monetary stringency which is going on at present, some of these projected concerns may not materialise. The wave of company promotion brought up on its crest numerous speculative ventures which have ended disastrously. But there is no doubt that this State is on the threshold of immense industrial developments which may have far-reaching effects on the character of its people ; the population of towns may and in fact will undoubtedly increase very largely ; and the process of change from agriculture to industrial pursuits may be accelerated beyond the conception of the present generation. The present difficulty in the industrial situation in the State apart from the shyness of Indian Capital in the matter of investing in Indian States, is the labour problem. Hitherto Baroda has suffered from the vicinity and competition of the industrial centres of Ahmedabad and Surat. Their superior resources absorbed all the most efficient labour, leaving the residue for the use of the State. The four cotton mills in existence are situated in Baroda and Sidhpur towns. The centralisation of the industry at Ahmedabad has made labour expensive and scarce for the *entrepreneur* in Baroda. Indian labour is notoriously immobile and the factories have to compete in getting to it and securing it for their purposes. One can hardly prophesy about the new industrial projects and their future. But one advantage they certainly have, which should ensure success. If one studies their local distribution,—besides two new mills projected at the capital, there will be 4 at Kalol, 2 at Petlad and one each at Billimora, Sidhpur, Visnagar, Navsari, Dehgam and Kadi, one finds that the selection of the places has been wisely conceived, which will help in the tapping of new sources of labour, and at any rate in stopping the outflow of Baroda State labour to other areas. Besides this advantage, there are other possibilities which cannot yet be gauged. The unfolding of the statistical results of the State's ambitious Industrial programme must therefore be left to the Census of 1931.

56. Variation in Population, 1911-1921—The above recital of the agricultural and economic history of the period will scarcely prepare the reader for the increase in population that was disclosed by the recent Census. The total increase in the State's population is 93,724 or 4·6 per cent. of the population of 1911. The

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margin gives the figures per division. The total increase is distributed and proportioned per division and compared thereafter with the proportion which the population of each division bears to the total. It will be seen that the Northern Division has increased in this decade proportionately as well as absolutely the most in the State.

Division	Increase	Rate per cent	Percentage of increase	Percentage of population
State	93,724	4·6	100	100
Central Gujarat .	20,612	3·0	22	33
North Gujarat .	68,416	8·2	73	43
South Gujarat ..	4,905	1·5	5	16
Kathiawad ..	—209	—·12	..	8

Although having only 43 per cent. of the total population, it claims 73 per cent. of the increase. Baroda shares in only about a fifth of the increase. Kathiawad is almost stationary. In Navsari, the increase is as we shall see later on largely confined to the urban population. Under these circumstances, it will be necessary to find out what proportion of this total increase may be ascribed to natural causes and what to migration.

57. Variation in Natural Population—The mortality in the decade has been shown to be very heavy,in fact much heavier than in the preceding decade, and yet the rate of increase has been higher in this Census than in the Census of 1911. The explanation must be sought therefore in a favourable balance of migration. For population can only increase in one of two ways. If the surplus of births over deaths is expected by all the evidences to be small, then the balance must be made up by the excess of immigrants over emigrants. The marginal figures give the birth-place figures summarised from the Subsidiary Table IV. The actual population shows an increase of 4·6 while the natural population increases only by 3·4. If we take into account only the natural population we can study the variation in population of the Baroda State-born, no matter where enumerated. This is one way—though not the most accurate—of isolating the migration factor.

Population	1921	1911	Variation per cent.
Actual Population ..	2,126,522	2,032,798	+ 4·6
Immigrants ..	232,494	222,957	..
Emigrants	220,696*	235,523	..
Natural Population..	2,114,724	2,045,364	+ 3·4

The margin shows the variation in natural population taking the figures for 1891 as 100. The natural population in 1921 shows a decrease of 10·3 since 1891. The decrease in actual population since 1891 is 11·9. Roughly there has been therefore a decrease in population since 1891 through migration to the extent of 1·6 per cent. In the present decade, the natural population however shows an increase of 3·4 since 1911; and the actual gain has been 4·6 ; therefore one would give 1·2 per cent. as gain through the balance of migration being in favour of this State during the decade. We will now see what the natural population in 1921 would have been, if the normal rate of increase was allowed to operate in the natural population of 1911. The margin works out the result. The natural population was expected to rise to 2,239,605, but instead, it was only 2,114,724. The deficit of 124,881 may be compared with that worked out on the basis of the actual natural increase in the next paragraph.

Year	Natural Population	Proportional variation since 1891
1891 ..	2,355,870	100
1901 ..	1,982,031	84·1
1911 ..	2,045,364	86·8
1921 ..	2,114,724	89·7

Natural Population in—
1911 = .. 1,982,031
× R^{10} or
1·0911 = .. 2,239,605
Natural population in—
1921 = .. 2,114,724
Deficit = .. 124,881

58. Volume of Migration in the Decade Estimated—A more accurate way of estimating the operation of the migration factor in the movement of population is to calculate the volume of migration by the method explained in para. 43. Applying this method, we find that immigrants in 1911-21 numbered 100,593 and emigrants 76,685, leaving a balance of 23,908 in favour of the State at the end of the decade or about the date of this Census. This figure is 1·17 per cent.

*At the time this chapter was written two provinces had not yet sent in their birthplace figures. The figure 220,696, was arrived at by assuming that the number of emigrants in 1921 was the same as in 1911. The final figures will be found in the Chapter on Migration.

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of the population of 1911. Small as it is it is the largest balance in favour of this State in migration ever recorded in the Census era. Even in the normal decade, as we have found out, the balance of migration was not so large.* The circumstances of this migration will be more closely studied at their proper places in Chapters II, III and V; but in the meantime it may be stated that the greatest beneficiaries in this respect have been the Northern and Central portions of the State.

In the calculation of the above figures, one circumstance has had to be ignored. During the last two decades, the stress of economic conditions has had their effect in rousing the spirit of adventure amongst the people. The Gujarati has been a coloniser, even from the early ages of his political history. When the full story of the colonisation of Java, the Malay peninsula, Cambodia and further East generally comes to be written the part of the people of ancient Anartta and Saurāshtra in these enterprizes of adventure will have to be amply acknowledged. In the meanwhile this report has the more prosaic task of recording that overseas emigration (beyond the limits of India) of people belonging to (and presumably born in) this State has increased during the decade. At the moment of writing only the Census figures of Kenya and Nyasaland have arrived; but as on the occasion of the last Census, this time also, a statement has been prepared from the information supplied by the Mahal officers of people who are known to have emigrated outside India from this State. The margin gives the comparative figures for 1911 and 1921. The majority of emigrants are to Africa, as may be expected: but there are now emigrants to Basra, and Iraq generally, and even to Siam and the Malay peninsula. There is thus an increase of about 1,500 (after deductions of estimated deaths) over the figures of 1911. Deducting these overseas emigrants, we get about 22,408 persons as the net gain through migration. The total increase in the census is 93,724. This leaves 71,316 out of the total increase as representing the excess of births over deaths. Thus by natural increase, the population should have amounted in 1921 to 2,104,114. The rate of natural increase is therefore 3·5 per cent. If we imagine that the normal rate of natural increase which is 9·11 per cent. per decade was allowed to operation then the expected population in 1921 should have been 2,217,986 by natural increase alone. But the deduced population by natural increase is actually found to be 2,104,114. The deficit of 113,872 represents the extent to which disturbing factors like plague, influenza, etc., have interfered with the movement of population. It is significant that the deficit calculated in this way is a little less than that found from the natural population.

Emigrants to	1911	1921
Europe ..	3,555	34
Africa ..		4,764
Asia exclusive of Aden ..		167
Elsewhere and unspecified ..		445
Total..	3,555	5,410

Population of 1911 ..	= 2,032,798
$\times R^{10}$ or 1·0911 ..	= 2,217,986
Deduced Population 1921 by natural increase ..	= 2,104,114
Deficit	= 113,872
Recorded Mortality from epidemics (plague and influenza) ..	= 112,994

59. Accuracy of Vital Statistics tested : Subsidiary Table V—From the calculations in the above paragraph, the deduced population by natural increase amounts to 2,104,114. But from the Subsidiary Table V, we find the total number of births registered during the decade was 580,390 or 28·6 per cent. of the population. The registered deaths numbered 612,055, leaving a deficiency of 31,665. Thus, if vital statistics were absolutely accurate, the population should have dwindled to 2,001,133 through natural causes, and the balance, 102,981, should have then to be credited to the excess of immigrants over emigrants. But this balance is as we have found far too high to be true. We shall have to estimate therefore how far the birth and death returns have fallen short of the truth. There is little to add to the account given in the Census Report of 1911 of the machinery and procedure of registration.† The procedure is much the same now, with this difference that in addition to the inspection authorities named in para. 84 of the 1911 report, the Sanitary Commissioner, the *tajvijdars* (circle inspectors) and Sanitary Inspectors are also required to inspect and test the regis-

Vide para. 43. In the calculation of the volume of migration in this decade, the rate of mortality has been assumed to be 40 per mille per annum, in view of the greater prevalence of epidemics during this period than at other times.

†*Vide* paras. 83—86 of the State Census Report of 1911.

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ters while on tour. Furthermore, like Baroda City all other towns with Municipal institutions (about 42 in number) have now been brought under the operation of the Compulsory Birth and Death Notification Act. Apart from this, prosecutions under the Act were for the first time instituted, but apparently the local magistrates were not yet impressed with the enormity of these offences, and they usually let off the culprits with only nominal fines of four to eight annas. At any rate there is no doubt, however, that the registration of vital occurrences is far more accurate now than heretofore. To take the case of births, which is far less accurately registered than deaths, the average of the last decade (1901-11) was 20·7 per mille. In the present decade (1911-21), the registered birth rate is 28·6 which surely points to greater accuracy of work in this regard. The greatest number of omissions happens in cases where infants die within two or three months from their birth. Now it has been calculated that approximately 60 per cent. of deaths under one year happen in the first quarter. If we assume that all these are unregistered, then the registered infant deaths would be only 40 per cent. of the truth. The average annual number of registered deaths of infants under 1 year has been found to be 11,049 in the decade.* The true infant mortality would appear to be therefore 27,622 per year. Again the usual Indian experience has been that 30 per cent. of births result in deaths within the first year. If we take this experience, we ought to have an annual average of births to the extent of 92,073, instead of the registered average of 58,039. Calculating on an actuarial basis, we find from Mr. Ackland's Life Table for Bombay males and females that to keep alive a population of 2,269,375 persons 100,000 annual births are necessary; so that for 2,079,660, the average population of the decade, an annual average of 91,640 births will be required. Another method is to assume that the population found at a census living under one year bears a constant relation to the births in that year. This constant relation is the resultant of the decreasing ratios of "risk" to which the infant is subjected month after month before he attains his first year. By this constant relation and the assumption that infant mortality proceeds more or less on the basis of a law, it is found that 100,000 births occurring between March, 1920 and the Census day in 1921 would return 78,727 infants under the age of one year at the latter date.† Our next step is to find out the corrected mean population‡ of infants during the decade. This appears to be 69,258. Calculating on the above proportion, we get 87,972 as the average number of births per year. Thus whatever method we apply, we get to approximately the same figures. Taking the mean of the last two estimates, the total number of births in the decade comes to 898,060. Of the above estimates, the most scientific and therefore accurate is the actuarial. The almost identical estimates by this method and the first proves the correctness of the conclusion that the registration of infant deaths is out by more than a half of the truth; they prove also that the registered births fall short of the reality by about 32,000 or over 56 per cent. per annum.

The proportion of omissions in death registration is happily less. If the births are estimated to have been 898,060, then according to our calculation of the natural increase, the total deaths should have figured at 826,744 instead of 612,055. There is thus an excess of 214,689 or 35·1 per cent. due to defective registration. The above estimate of deaths is also arrived at by other means. The population of 1921 aged 10 and over may be taken (allowing for migration) to be the survivors from the population of 1911. If this figure is subtracted from the population of 1911 we get the deaths amongst the 1911 population. We have to add the deaths amongst the births in the decade to get to the total of deaths in the decade. The margin works out the calculations, from which it will be seen that allowance has been made for migration in both sets of figures,—21,000 being allocated to those aged 10 and over and 1,408 to those below

Population of 1911	2,032,798
Deduct Population of 1921—	
Aged 10 and over (less 21,000 being gain in migration aged 10 and over)	1,535,841
Deaths in 1911 population	496,957
Births in decade 1911-21	898,060
Deduct Population of 1921 under 10 years. (Less 1,408 for migration gain) ..	568,273
Deaths among births in decade ..	329,787
Total deaths in decade	826,744

* *Vide* Subsidiary Table IX, Chapter V, Part I.

† *Vide* Appendix II, where the calculations are worked out in detail.

‡ Corrected according to the combination of Graphic and Columnar Methods explained in Chapter V, Part II.

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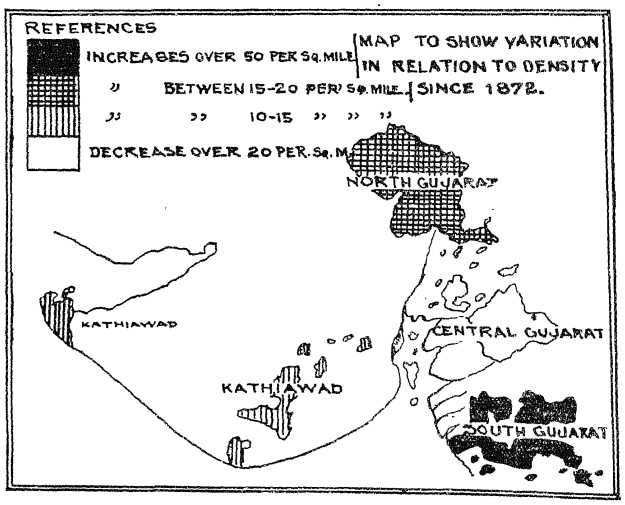
that age. The deaths can also be approximately estimated independently by recourse to Sir George Hardy's method described in paras. 15-16 of his Age Report for 1901. It consists in simply deducting the population of 1921 aged 10 and over from the total population of 1911 and assuming that the difference represents the deaths in the decennium *at an average age of 5 years and over*. This assumption although involving an under-estimate of child-mortality below the age of 5 seeks to neutralise this circumstance by the fact that the registered deaths of 5 years and over are doubly overstated "firstly as being more completely registered and secondly as including certain deaths of persons at younger ages.*" This difference is then compared to the registered deaths at ages 5 and over and the deaths at all ages are estimated from registered deaths at all ages on this proportion. Thus :

Deaths in 10 years at 5 years of age and over ..	496,957
Registered deaths in decade at 5 years and over ..	380,455
Registered deaths at all ages in decade	612,055
Estimated deaths at all ages in decade	$\frac{612,055 \times 496,957}{380,455}$ or 799,477 deaths.

By this estimate we get rather a less number of deaths than the total arrived at by the other. But as pointed out by Mr. Ackland, the factor of under-estimation of child-mortality may not have been completely neutralised by this process. If however we take the last of the above estimates of births and deduct the natural increase we get a total of (879,720—71,316) or 808,404 deaths, which figure corresponds much more closely to the estimate of deaths by Hardy's method.

60. **Variation in Relation to Density**—Having studied the constituent elements in the movement of population, it will be interesting to compare how far the increase in population (in absolute figures) compares to the change in relation to the actual population found per square mile. The map given in the margin gives the variations in relation to density since 1872. The consideration of mere percentages of absolute figures would not give as much idea of the movement of population as the increase as measured by the addition of persons to the square mile would do. For instance from the consideration of the fact that the Northern Division has increased by only 6 per cent. since 1872 and that Kathiawad's increase on the other hand amounts to 12, one would conclude that the latter division had exercised the greater influence of the two in the total movement of population. But this is not a fact. With only half the percentage of increase, North Gujarat has added 17 to the square mile, while Kathiawad has added only 15, in the last forty-nine years. This map should therefore be studied in conjunction with the diagram given in para 40, so that the two aspects of the variation in the population can be seen. Subsidiary Table III gives the proportional figures.



*Mr. Ackland's Actuarial Report, p. 171, India Census Report of 1911.

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61. Variation in Areality and Proximity—One way of studying the variations in populations is, as above, by proportioning them to the square mile. There is another way which enables one to gauge the pressure of population on land as to calculate the area commanded by each person from Census to Census: this is known as Areality: and proximity is the distance between each individual, on the assumption of equal distribution, which can be calculated on the formula: $d^2 = \frac{200}{n\sqrt{3}}$ (where d is the distance between any unit-person, house, town, village or whatever else—, and n is the number of such units in 100 square miles.†) The areality of persons per divisions and the proximity of persons in the State are worked out in the margin. The areality is by acres; and the proximity is by yards. Since 1901, when proximity of individual person was 122 yards, the proximity has become closer by 5 yards in twenty years.

Division	Areality (acres)		Proximity (yards)	
	1921	1911	1921	1911
State	2·45	2·56	117 yds.	120 yds.
Central Gujarat with city ..	1·74	1·79		
South Gujarat ..	3·40	3·45		
North Gujarat ..	2·16	2·34		
Kathiawad ..	4·86	4·85		

62. Variation in age-constitution: Probable Trend of Death-rate in the near Future—The net result of the movement during the decade may be now studied in reference to the age-constitution of the population. It has been found by actuarial methods that the Baroda death-rate for the age-period 0-5 is 141·2 per mille per annum.* The corresponding death-rates for the age-periods 5-60 and 60 and over are 24·79 and 108·4 per mille per annum respectively. Thus any large change in the age-constitution cannot but have a profound effect on the mean death-rate. In para. 44, the effect of the famine in thinning away the extreme ends of the age-constitution was shown. In 1901, the people aged 5-60 constituted no less than 86·7 per cent. of the population. The result should have been a lowering of the death-rate and an increase in births. It is usually thought that a severe famine like that of 1900 results in the decade following in what is described in general terms as an outburst of fertility. That the increase in 1911 was not large but only 4·1 is because the period, 1901-11, was not very favourable. But the statement that famines usually result in large increases in population can only be true to a limited extent. In a settled community like Gujarat, where the economic sense is well developed, a famine may be expected to have the result of inhibiting reproduction amongst large classes of people. It is only in sparsely populated and backward tracts that the law above stated can operate to any extent. From that point of view, the large increases that happened in 1911 in Trans Sabarmati area and West Kadi (particularly in Harij Taluka), in the forest areas of South Gujarat and Kathiawad, and in the Chorashi talukas of Central Gujarat can be explained. On the other hand wherever the inhabitants belonged to a more intelligent class, decreases occurred. In the decade of 1911-21 the so-called outburst of fertility may be said to have spent itself. The age-constitution at the 1911 Census, besides, was more or less a return to the normal. Thus the population at the beginning of the decade was exposed to a heavier rate of mortality; and the birth rate was normalised. The marginal table will enable the reader to compare the age constitution of the total population of 1921 with that of the natural population (born and enumerated in the State) of the same year. This comparison will enable him

Age period	1911	1921		Increase per cent. since 1911
		Natural Population	Actual Population	
0–5 ..	15·5	13·91	12·9	—12·6
5–60 ..	80·5	81·70	82·4	7·0
60 and over.	4·0	4·39	4·7	23·0

†If 100 square miles be conceived as a rectangle, then four full hexagons, plus four half-hexagons and four triangles, altogether equal to $6\frac{2}{3}$ hexagonal areas, can be formed in it. If villages are arranged on each point of a hexagon, 20 can be so formed in the rectangle. Thus, n = the number of villages = 3 N or three times the number of hexagons. The area of N hexagons $= \frac{3\,N\,d^2\sqrt{3}}{2} = 100$ square miles by hypothesis. Hence $d^2 = \frac{200}{n\sqrt{3}}$

*From the Table attached to Part II of Chapter V.

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to see that the increase in the middle age-period was due doubtless to the influx of immigrants. But in this decade there was another tendency at work which thinned away the middle-age group. Influenza and the plague put all their weight on the middle ages, sparing the young and the feeble. But we see also that the child-population has decreased by 12·6 per cent. and now forms only 12·9 per cent. of the total. On account of the greater deficiency in children therefore, the middle age-group now forms 82 per cent. of the total population. The position therefore seems to be that in the coming decade, a slight decrease in the death-rate may be expected.

63. The Probable Trend of Birth-rate in the Near Future—As to births, a different choice of age-periods and a reference to the civil condition figures will be required. The marginal table gives two sets of proportionate figures for the age-periods 0-15, 15-50, and 50 and over for three Censuses. This table shows the full effect of the epidemics on the healthy age-groups. From Subsidiary Table V of Chapter V we also learn that the proportion of married females aged 15-40 to 100 of their sex has decreased from 37 to 33. This circumstance together with the age-constitution of 1921 indicates a probable shrinkage in births at least in the first few years of the ensuing decade; but as the girls aged 5-15 advance in years, they will swell the percentage and in the end repair the deficiency of births. The marginal table shows, that children aged 0-15 are now 4 per cent. more than in 1911 proportionately to the total population. The female children aged 5-15 are now 12 per cent. of the population, while in 1911, they were only 9. With this added strength, there is no fear that the ensuing decade will fare badly in regard to births than the previous one.

Age Period	1901	1911	1921
0–15 ..	35	35	39
15–50 ..	55	55	50
50– ..	10	10	11

64. Houses and Families—The general features of the movement of population have now been presented. Before carrying the analysis further into the different districts of the State, it will be useful to turn for a moment from the persons enumerated to the houses which they inhabit. As houses form the unit on which the subsequent enumeration is based, the point has to be decided quite early in the course of census operations as to what should be taken to be the "house." Accordingly it was decided in this Census to adhere to the definition adopted in the Census of 1911. Circumstances vary largely in different parts of India, but there are two main definitions of "house" which have prevailed—the structural and the social. The social definition has been adopted here since 1911 as explained in para. 33. The structural criterion on the other hand lays down that a house should be the dwelling place of one or more families, having a separate entrance, whether that entrance be from a public road, compound, corridor, balcony, gallery or otherwise. In the latter definition, which was adopted in the Censuses of 1901 and previous years, the unity of the tenement was emphasised irrespective of the families residing therein. In the former, now adopted, the unity of the Census family was more insisted on. In fact, the Census family is in practice identified with the Census house. Therefore the enumeration of houses with this definition gives a clue to the number and size of families in the State. The other great advantage of the social definition is that it is readily understood by enumerator and people, and that therefore the record is fairly accurate. The old fear that the house-list is the prelude to some new Municipal imposition revived in some towns, but as the Censuses in urban areas were conducted entirely under the direction of Municipal authorities with popular help, much misunderstanding was successfully removed. Occasionally as with the Tenement Census in the City, people looked upon the inquest with some suspicion as if some new fangled attack were contemplated upon their liberties. On the other hand, some people tried to take advantage of the tenement census to put in claims for ownership of houses thinking that registration in a Census record would have probative value. The change in the definition made in 1911 precluded any accurate comparison with previous figures; but on the whole, as Rao Bahadur Govindbhai points out, "except in the case of the comparatively well-to-do, the differences arising from the change do not seem to have any marked effect on house numbering." The differences, however, are not merely confined to the well-to-do. An increase in urbanisation certainly has the effect of congregating families in large buildings. The Tenement Census taken in Baroda City would illustrate this point in the next chapter. I am inclined

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to think that in the future, with the growth of industrial towns, it will be necessary to adopt the two definitions simultaneously at least in urban areas, as was done in regard to the City of Baroda in the present Census. The present definition does not also serve as a guide to overcrowding; and all enquiries regarding the kind of structure, the amount of house-room, the standard of comfort, etc., have to labour under a disadvantage in consequence. The question of comfort in house-room has been already discussed and therein the available room space per individual adult as well as person of any age has been also estimated. Here we shall consider the variations in the number of occupied houses, the "density" of houses, and the number of persons per house. The question of the size of families will have to be deferred to a later chapter. Subsidiary Table VII gives the main statistical data.

65. Variation in Occupied Houses—The number of inhabited houses has increased from 506,297 to 512,845 or by 1·3 per cent. The rate of increase of population has been, as we have seen, much larger. A comparative table is given on the margin which will show the rate if variation per division. Everywhere except in South Gujarat the houses have increased at a lesser rate than the population. Perhaps the number of houses in 1911 was inflated by the inclusion of numerous plague structures to which people had sent their families on account of the epidemic which was raging in that year about the time of the Census. All over the Central and Northern Divisions, this appeared to be the case. In Central Gujarat, the increase of 1 per cent. in houses in 1921 is made up of an increase of 2·4 per cent. in the district area, and a decrease of 6·1 per cent. within the limits of the City of Baroda. The decrease in houses and population in the City will be discussed in the next chapter.

Division	Occupied Houses in		Increase in population since 1911
	Number	Variation since 1911	
State	512,845	+1·3	4·6
Central Gujarat including City .	180,680	+1·01	3·0
North Gujarat .	223,847	+1·8	8·2
South Gujarat .	68,928	+1·3	1·5
Kathiawad ..	39,390	—·005	—·1

66. Variation in Density of Houses: Number of Persons per House—The density of houses per square mile is another indication of the growth of population. Since 1911 (as will appear from the Subsidiary Table VII) the growth of population has led to the adding of exactly two more houses to the square mile, as against an increase of 12 persons to the square mile during the same period. If the size of family remained the same, there should have been an increase of about three houses instead of two. As a result, the number of persons per inhabited house has increased by 13 per 100 houses in the State. This "overcrowding" per house is a feature of this Census in all parts of the State, except in Kathiawad where the population is stationary. The size of family cannot be said to be exactly identical with the number of persons per house. The anomaly of plague-hut and town-house being separately numbered although belonging to the same family has been already mentioned. On the other hand fear or suspicion of the Government's intention may have led a few others to conceal separate *chulahs* to escape the eyes of the tax gatherer. Again, a number of shops and other non-residential houses must have been regarded as inhabited houses because a care-taker occupies them in the night. For these reasons it is not possible to infer from the increase in the number of persons per house that the size of family has increased. The size of family will be separately studied in connection with sex and fertility, but in the meantime it may be generally observed that the feature remarked on in the last census report that the size of family was generally larger in South Gujarat and Kathiawad continues in this Census also. As to size of family generally all the social tendencies—such as are not readily amenable to statistical treatment—indicate that it is getting smaller and smaller with the advance in education and standards of life and the growing stress in the economic environment.

67. Present-day Tendencies in the Break-up of Joint Families—But the number and variation of houses do help in indicating, although in a very rough way the trend of the family system in the sense that they show the extent to which the joint family of the old-world India is disintegrating and giving place to

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the families of the modern type. The family of the modern type would mean usually that of the married house-holder with his grown-up wife (assumed in India to be of the age of 15 and upwards) and his young, unmarried children and dependents. There are also the adult-widower and the adult bachelor presumably independent earners, with separate establishments. The widow in India is usually a dependent; and the problem of the independent "bachelor girl", not yet seriously encountered with, in India may be ignored. Thus if the number of houses is found to correspond closely with the total of married females aged 15 and over, as well as of bachelors and widowers (both say of 25 years and upwards), one would imagine that the joint family system has succumbed seriously to disruptive influences. The marginal table gives the comparative figures since 1901. The married female aged 15 and over has been taken, because it is when she has attained that age that the young wife begins to strain at the control of her mother-in-law and the disruptive tendencies ensue with quarrels between the wives of the brothers living jointly in a single commensal family. The bachelor and widower aged 25 and over have been taken because it is about that age that a man irrespective of his civil condition, begins to set about to earn his livelihood.* Taking the divisions separately into account the marginal table gives the required ratios. Owing to special conditions the City marks the highest water mark of these disruptive tendencies. The other figures are also instructive. Figures for South Gujarat and Kathiawad show strikingly how the joint family is the least disturbed in those parts. With the exception of the City, the Northern Division shows the greatest indication to approach equality between the two sets of figures.

Year	Number of married females 15 and over of unmarried and widowed males 25 and over	Proportion of inhabited houses to 100 such persons
1901 ..	543,723	90·11
1911 ..	562,762	89·97
1921 ..	570,644	89·87

Division	Total of unmarried females 15 and over and unmarried and widowed males 25 and over	Proportion of inhabited houses to 100 such persons
Central Gujarat including City ..	196,385	92
Central Gujarat excluding City ..	170,210	90·4
City	26,175	102·7
North Gujarat ..	236,175	94·8
South Gujarat ..	91,632	75·2
Kathiawad	46,452	84·8

One other test requires to be noticed. From the figures supplied by the Revenue Department, it will be seen that the number of registered holders of land (Khatedars) increased from 307,958 in 1911 to 328,160 in 1920. The population supported by these persons (on the basis of 4 per Khatedar) has similarly increased from 60·6 per cent. (of the population of 1911) to 61·7 per cent. (of the population of 1921). Now, if it be true that every person who became a Khatedar would tend to set up a house of his own, then the proportion of the number of Khatedars to the number of inhabited houses at each Census would correspond very closely to these ratios. And in fact this is so. In 1911, this ratio (of Khatedar to inhabited house) was 60·1 per cent. and in 1921, it went up to 62·6. We have already seen that the rise in number of houses has not been *pari passu* with the increase in population. If the variation in the number of houses in the decade were really indicative of the true situation, and not vitiated (as it has been) with the limitations pointed out above, it would have been possible to infer from the increase of the above proportions from 60·1 to 62·6, an increasing evidence of the fact that the possession of a Khata and the status of a peasant proprietor is becoming an additional influence in the break up of families; and indeed such local enquiries as I have been able to make seem to confirm this opinion. I understand such fission in families occurs more in agricultural than in non-agricultural communities.

68. Divisional Variation, 1911-1921—Baroda *Prant*—Having studied the general movement of population in the State in its different aspects we shall now briefly carry the analysis to the administrative divisions and see how

* In the Census Reports of 1911, only married females 15 and over were taken into account. In this State, the number of houses is very largely in excess of the number of such females. Therefore marriage alone fails as a test of disruption of the joint family.

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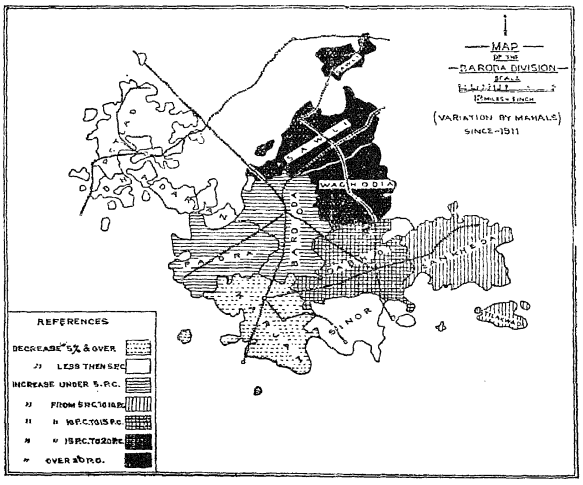
far the influences have varied in their operation in the different *prants*. Taking the Baroda *Prant* first we see that the crude variation since 1872 is—1·3. Eliminating errors of record we have found (*vide* para. 42 above) the total decrease to be 2·1 per cent. against a general increase of 4 per cent. in the State. The marginal table compares the variations since 1891, with the variation since 1901. All parts of the division suffered acutely from the famine of 1900. The general decrease in 1901 was 23 per cent. Since 1901, the *prant* has made up its deficiency of population by 13·4 per cent., but it is still behind the 1891 figures by 12·5 per cent. Almost all the parts of the *prant* repeat this story, with the exception of Charotar, which shows progressive decline since 1891. It is a tract of intensive cultivation and of very high density. Already in 1891, Petlad taluka had a density of 862 to the square mile. Charotar has suffered from famine and the continued scarcity of recent years much more intensely than other less advanced parts of the State. If the immediate effect of the famine of 1900 here was not so disastrous as elsewhere, it was because of the greater staying power of the people. But the continued economic stress of successive lean years has accentuated the pressure of the population on the means of subsistence and led to the realisation of the fact that continued subsistence on agriculture on its present scale of cost and prospective diminution in returns was becoming more and more prohibitive. As a result numbers of able-bodied people have emigrated in search of livelihood. On the other hand, the economically backward areas although they suffer most immediately from famine conditions are also those which recuperate the most quickly after these have subsided. The immediate results of the famine of 1900 were far more serious in Chorashi talukas than anywhere else in the *prant*. The distress here was acute, and the mean decrease in population in 1901 amounted to 36, rising or even as high as 48 per cent. (in Tilakwada). But the recovery in Chorashi was no less rapid in 1921, when the leeway in population was almost made up, and the total increase since 1901 has been 48 per cent. The release of large grass reserves in these Chorashi talukas for purposes of cultivation led to an influx of settlers there. Cotton crop began to be extensively cultivated; and the overflow population from congested Charotar found room in these places. But Chorashi not only received recruits from Petlad and Bhadran talukas. There was a little movement also from Vakal and from Kahnam. The increase in population in Chorashi since 1911 has resulted in the addition of one village, and at least 83 new *paras* (hamlets). It does not appear that Charotar could have received many immigrants from the surrounding British and States territory. The Panch Mahals District shows an increase of 16 per cent. Similarly

Divisions	Population in 1921	Percentage of variation				
		1911-1921	1901-1911	1891-1901	1901-1921	1891-1921
Divisional Total ..	612,800	4·3	9·0	—23	13·4	—12·5
Charotar	170,050	—1	—4	—16	—4·4	—20
Vakal	145,176	61·2	6	—21	8·5	—15
Kahnam	148,598	2	14	—21	16·4	—8
Chorashi	148,976	17	27	—36	47·8	—5



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Thasra, Kapadwanj and Borsad talukas also show increases. Next to Charotar, Vakal has recovered the least from the famine of 1900. Both Baroda and Padra Mahals suffered and since 1901 have only advanced by about 8 per cent. The most progressive part of Kahnam is Dabhoi taluka, where Dabhoi town has become a busy market and a railway centre. The alignment of railways from the first hit Sinore and Karjan talukas very hard. Almost the entire traffic on the Narmada was adversely affected. As pointed out in the Census Report of 1891, " these lines drew a considerable portion of the traffic to themselves from the original route by boats. Thus the old employment of capital and labour and the occupations of many other middlemen were diverted and transferred to the new channel by railway.... the symptoms of decay were quite visible at the Census of 1881." Besides, the Karjan taluka is ringed round by the prosperous cotton-growing talukas of Broach, whose ginning factories have drawn away the labouring population from our State. As a cotton-growing tract Kahnam has however never favoured a high density. Only in Sinore taluka, was a density of a little over 300 ever attained.

Baroda Division has on the whole increased more rapidly since 1901 than the other divisions. The net variation since 1872 shows indeed a deficiency, but, as explained before, that is due principally to the fact that in the first half of the Census Era, the *prant* underwent the privations of high mortality and famine more than the other *prants* of the State except Kathiawad. Since 1911 the variation in age-periods shows that all ages under 15 and particularly 10-15 have large increases. The birth rate was therefore presumably higher in this decade than in the previous. The age-period 15-40 suffered loss to the extent of 9 per cent.; but the higher age-periods show increases. The margin gives the comparative age-constitution of 1911 and 1921 and shows the district in a somewhat more favourable position in regard to high mortality at the end than at the commencement of the decade. The higher proportion of the middle age group 5-60, is due doubtless to the large increase of 50 per cent. in the age-group 10-15 and also increase of 9 per cent in age-group 40-60. The age-group 15-40 shows a decrease of 8 per cent., indicating the ravages of influenza and possibly some loss through migration. Exact emigration figures for the *prant* proper (excluding the City) are not available; immigrants to the division (excluding the City) have however slightly increased from 73,794 in 1911 to 74,688 in 1921; at any rate it will be safe to say that migration has not counted much as a factor in the variation in this *prant* in this decade. As to births, it must be observed that the death rate in the decade has been uniformly unfavourable to females, particularly of the child-bearing ages, to a greater extent than in the State generally or in any other division. This circumstance may affect the birth rate adversely in the ensuing years.

Age period	1911	1921
0–5 ..	15	12
5–60 ..	81	83
60– ..	4	5

69. Kadi *Prant*—The history of the Kadi *Prant* especially during the last 20 years repeats the same story as Baroda. In 1901 the more fertile and prosperous portions suffered comparatively less from the famine of 1900 than the other parts, but their subsequent progress in 1911 and 1921 was slower. The less favoured tracts—the Western dry belt and the Trans Sabarmati Area—were hit very hard and lost over 30 per cent. of their people in 1901; but the subsequent rebound, in 1911 though not so satisfactory as in Chorashi showed a fair increase. The rebound was retarded no doubt by the heavy mortality of the last twenty years. Plague in the first, and influenza and plague combined in the last half of this period, helped in this retardation. The net result has been that the total increase in the *prant* since 1901 is 8 per cent. On the other hand the total loss since 1891 is 18. The net variation since 1901 is the mean of differing ratios of in-

Division	Population in 1921	Percentage of variation				
		1911-1921	1901-1911	1891-1901	1901-1921	1891-1921
Divisional total ..	900,578	+ 8	+·3	—24	+ 7·9	—18
East Kadi	515,372	+ 7	— 4	—20	+ 2·6	—17·5
West Kadi	298,995	+12	+ 5	—30	+17·5	—17
Trans Sabarmati ..	76,211	+ 1	+11	—31	+11·5	—23·5

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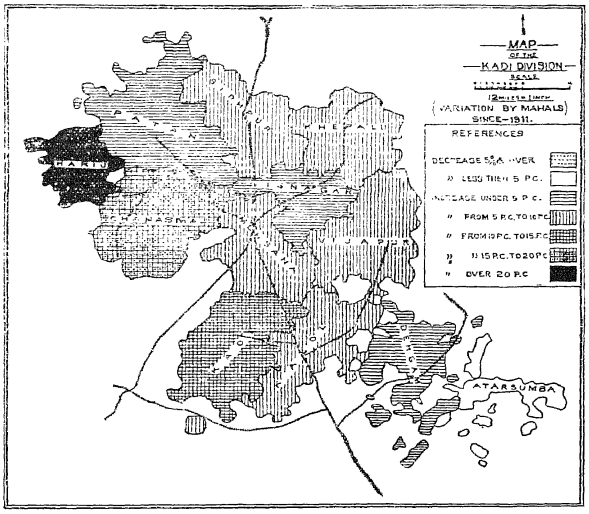
crease wherein West Kadi has the largest share—namely 17·4 per cent. followed by Trans Sabarmati (11·5) and East Kadi (2·6). The increase since 1911 has been general in all parts except in Dehgam and Atarsumba talukas which are practically stationary. As shewn in the section on public health, Kadi *Prant* suffered equally with the other parts from the epidemic visitations of the last decade. The margin shows the comparative age-constitution of the *prant*. The variation in age-periods since 1911 (Subsidiary Table VI of Chapter V) reflect generally the same features as in Baroda *Prant*: the young under 15 years, and the old aged 60 and upwards have increased largely since 1911. The increase in the age-period 0-10 points to a higher birth rate in the decade. The decrease in the middle age-period 15-60 is also apparent in this division as in the Baroda *Prant*; but the depletion wrought by influenza was not so large as in that *Prant*, being in part made up by the influx of immigrants. The migration figures show immigrants increasing by 14,455; and emigrants have decreased by 5,553. The emigration figures for 1921 can only be relied on, for those of 1911 are only estimated *pro rata*. Applying the Longstaff method, there would be roughly 35,400 immigrants and 27,300 emigrants—the net gain from this calculation being 8,100 or 12 per cent. of the total increase in the division. But perhaps the true gain from migration is larger. The increase in the number of immigrants is shown in the establishment of five new villages and 41 new hamlets in the *prant*. These are distributed in the margin. The largest number is as may be expected in West Kadi bordering on Jhalawad, one of the Kathiawad *prants*, from which large batches of Jhalawad Kanbi cultivators have come and settled in Chanasma and Kadi talukas.



Age period	1911	1921
0-5 ..	15	13
5-60 ..	82	83
60- ..	3	4
All ages .	100	100

Population	1921	1911	Variations since 1911
Actual Population ..	900,578	834,744	+ 8·2
Immigrants	59,613	45,158	....
Emigrants	79,265	84,818	....
Natural Population..	920,230	874,404	+ 5·3

Division	Number of new villages	Number of new hamlets
Trans Sabarmati	....	13
East Kadi ..	2	10
West Kadi ..	3	18

70. **Navsari** *Prant*—This *prant* is the most fortunately circumstanced in regard to the regularity of its seasons and the reliability of its rainfall. In the 49 years of the Census era its record as seen from the Chart is the most satisfactory in the State. Since 1872, the crude Census increase has been 41 per cent. in 49 years: the corrected rate is however estimated to be 27·8 per cent. Since 1891, the increase has become slower, being only 7 per cent. The famine of 1900 hurt it the least of all the divisions and

Divisions	Population in 1921	Percentage of Variation				
		1911-1921	1901-1911	1891-1901	1901-1921	1891-1921
Divisional Total ..	340,372	+1·5	+12	—6	+13·3	+ 7
Rasti	162,920	+5	— 1·4	+ ·8	+ 3·4	+ 4
Semi-Rasti	77,967	—3	+20·8	—10	+17·3	+ 6
Rani	99,485	—4	+31	—14	+30·2	+12

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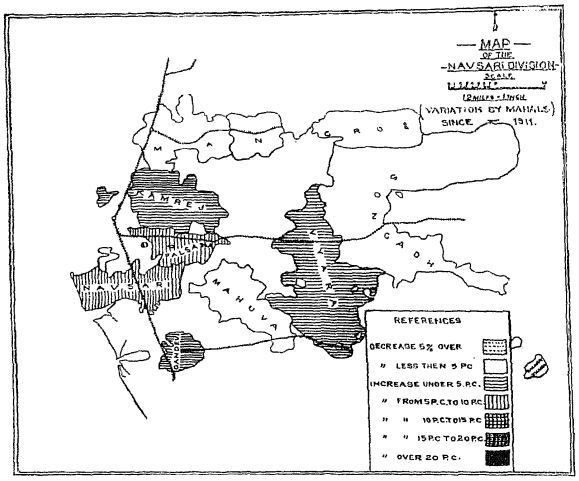
its operation was limited only to the more backward areas. In Rani Mahals, the 1901 figures showed a decrease of 14 per cent. on 1891, the next decade showing however a rebound of +31 per cent.; in the last ten years this rate of increase ceased to function, and the figures show a slight decrease in 1921. Semi Rasti repeats the same tale. In the Rasti Mahals the Navsari taluka alone shows the most progressive character. Except in 1901-11 when it was badly hit by the plague, all the decades show increase since 1891. It is significant however as we shall see in the next chapter, the greater part of the increase in Rasti talukas since 1911 has been in the urban areas. Practically all the available land has been taken up in Navsari and Gandevi talukas; the density on cultivable area is as high as 888 in Gandevi and 632 in Navsari; and it may be said that in regard to agriculture, a critical point has been reached for the population of these areas. Large numbers emigrate mostly to Bombay and Surat and even abroad to places in South and East Africa. From the variation of the population at certain age-periods we learn that 0-10 has remained almost stationary, 10-15 has increased but not so largely as in other divisions. The decrease in age-period 15-40 is also not large. In fact there seems to be a more uniform age-distribution in this *prant* than in other *prants* of the State. The age constitution is given in the margin and shows a position similar to the other districts that we have so far examined. The public health conditions in the decade were as we have seen distinctly unfavourable to this division. In 1918 the recorded death rate was higher than in Baroda and Kadi. Immigrants have decreased by about 2,000, and emigrants have increased by about a thousand. The balance was therefore slightly against this division.



Age period	1911	1921
0–5 ..	16	13
5–60 ..	80	83
60– ..	4	4

71. Amreli and Okhamandal *Prants*—These two *prants* may be considered together for convenience. The case of Okhamandal may be briefly discussed. From 1891 to 1901, the population of this area increased by 399 or 1·5 per cent. But this was due entirely to the fact that Dwarka town increased in that decade by over 1,400. The next decade was still more unfavourable, the adverse balance being 1906, or 7 per cent. In the decade 1911-1921 the population was almost stationary; the slight increase of 77 being represented by an increase of 310 in Beyt and a large increase of 1,429 in Dwarka town. As a result, the country side is being impoverished to swell the population in these urban areas. The history of this little division for the last 20 years is part of the black record of the Kathiawad Natural Division to which it belongs; its own contribution has been the blackest portion of that record. The margin gives the comparative figures for the two *prants* combined. It has been already pointed out (para. 42) that the crude variation since 1872 in these two *prants* (combined) should be reduced to 2·6

Division	Population in 1921	Percentage of Variation				
		1911-1921	1901-1911	1891-1901	1901-1921	1891-1921
Divisional Total ..	178,060	—0·12	+3	—4	+2·7	—1·2
Middle Block ..	92,940	—2	+6	—0·1	+4·1	+4
Scattered areas ..	23,117	—6	+1·4	—3	—5·1	—8
Coast areas	62,003	+5	—1·5	—9	+3·7	—6

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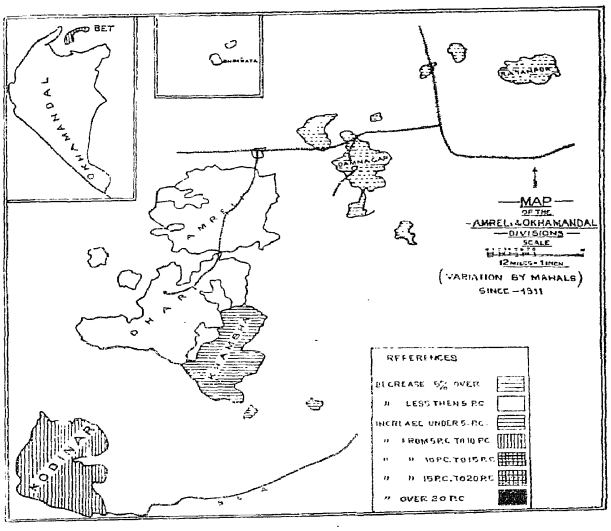
per cent. on account of under-enumeration in that date. Taking the figures of 1891, however, as being accurate, the two *prants* have declined by about 1 per cent. in the last 30 years. The decrease on account of the famine of 1900 was only 4 per cent. due to the influx of temporary immigrants in Amreli and Dammagar Mahals and Okhamandal. The Middle Block which contains Amreli taluka showed therefore a decrease of 0·1 per cent. But in the forested portions of this area Dhari and Khambha showed decreases of 6 and 21 per cent. respectively. Kodinar also showed a large decrease of 16 per cent. in that Census. In the next decade this taluka was ravaged by the plague and increased by only 3 per cent. in 1911, but the two other talukas showed a large increase in that Census. Similarly Ratanpur and Bhimkatta, which were hard hit by the famine and lost heavily in 1901, increased largely in 1911.

The general position as disclosed in 1921 is that the population is almost stationary in the two *prants*. In the Middle Area a mean decrease of 2 per cent. is made up of decreases in Amreli and Dhari talukas and an increase of 4 per cent. in Khambha. In the Scattered Areas where there is a general decrease of 6 per cent. Ratanpur has decreased by 11 per cent., Dammagar and Bhimkatta have decreased by 5 and 4 per cent. respectively. Subsidiary Table IV shows that although the number of immigrants has remained the same the number of emigrants has decreased considerably. Calculating by the Longstaff method, there is a net balance of 8,200 in favour of these two *prants*. The census variation in 1921 is a decrease of 109 persons. A natural decrease of 8,300* persons is therefore the result of the decade's high mortality. The general death rate in these *prants* was higher than in the other divisions. In 1918, the recorded death-rate went up to 77 per mille for males and 85 per mille for females. As a consequence of this high mortality amongst women, the proportion of married women aged 15-40 to the total female population has decreased from 37 to 32 per cent. The variation by age-periods also shows a decrease of 14 per cent. (the largest in the State) amongst persons aged 15-40. The age constitution of the two *prants* shows a situation similar (perhaps a shade weaker) to that in other *prants*. The proportions correspond however to the State average given in para. 62.



Age period	1911	1921
0–5 ..	16	13
5–60 ..	79·5	82
60– ..	4·5	5

72. General Conclusions—The discussion on the movement of population may now be summarised. The set back in 1900, which was in evidence in all parts

*It is curious to note that the registered figures show a surplus of births over deaths—in this Division—*vide* Subsidiary Table V. According to the method explained in the Appendix II, the total births in the decade in this division may be estimated at 77,252. The total deaths should therefore be according to the above calculation 85,551, or nearly 50 per cent. of the population.

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of His Highness's dominions, is now being gradually retrieved. In fact the normal rate of increase for the State would have had effect in each of the two Censuses since 1901, had it not been retarded by plague in one decade, and plague and influenza combined in the next. The rate of census variation has increased from 4·1 to 4·6 per cent. But this increased rate is not through natural causes, namely the increasing excess of births over deaths. The balance of migration has risen in favour of the State from 0·4 per cent. in the first half to 1·2 in the last half of the 20 years. The natural rate of increase has therefore diminished from 3·7 to about 3·4. Migration has operated mostly in North Gujarat where it contributed at least 12 per cent. towards the total increase, and in Kathiawad, where it nearly wiped off a decrease of over 8,000 through natural causes. The decade, 1911-1921, was marked by a very high rate of mortality, but unlike the localised epidemics of other years, this State was visited in common with the rest of India, by a pandemic which left no place for people to escape to. Beyond inflicting heavy loss of life, the influenza epidemic resulted therefore in no movement of population. The general effect of the 1900 famine seems to have been that the most immediate sufferers were the backward areas. In 1901, they showed the most marked decreases in population through the famine, but in 1911, it is they that recuperated the most quickly. In 1921, these backward areas again show fairly large increases, with the exception of the unhealthy forested regions in South and North Gujarat, and in Kathiawad generally. The rates of increase in 1921 are lower in the settled and fertile portions, where the ratio of cultivated land is high, than in the drier belts and more infertile regions where there is more scope for expansion. The age constitution in 1921 shows that the State is a little more favourably situated in regard to mortality in that the proportion of the more exposed periods of life to the total population is less than in 1911. Everywhere, the age-period 0—10 shows increase, from 10 per cent. in North Gujarat to ·1 per cent. in South Gujarat, indicating a higher birth rate in the decade. The age period 15-40 everywhere shows decrease; and it is also significant that everywhere in the State the proportion of married females aged 15-40 per 100 of their sex has decreased since 1911. Births will therefore rule low at least in the first few years.

73. Variation by talukas classified according to density—Generally statement that the areas of high density have shewn a tendency to remain more or less stationary or at any rate to increase at a diminished rate is borne out by Subsidiary Table VI, where talukas are classed according to density from Census to Census, and the variation in each class is then found out in absolute figures and in proportions. It must be remembered however that the issue is somewhat obscured by the figures of South Gujarat in regard to the density classes 450-600 and 600 to 750. The population of Gandevi and Navsari talukas (which now belong to these classes) has increased in this decade for reasons which are not connected with the pressure of population on agricultural land. The urban areas have contributed largely to the increase in these talukas; apart from that, a severe localised epidemic of plague in Navsari taluka led to a temporary dispersal of population about the time of the Census in 1911 which rather affected the figures of that date. Omitting these two talukas, we see that the areas of high density (450 and upwards) have uniformly shown decreases. In Central Gujarat they have amounted to 5 and 2 per cent. in the two decades since 1901; and in the next class 450-600 the variation is very slight indeed. In North Gujarat the whole class 450 and above has now been extinguished. From 1891 to 1900, there was almost a general come-down in class by one step in 1901. Since then only three talukas—Baroda Mahal, Waghodia and Kheralu,—besides the two talukas of Navsari and Gandevi—have improved in class of density in the census of 1921. Baroda and Kheralu have each come into the class 300-450; we know the East Kadi talukas (which belong to this class) have all increased in this decade. The class 300-450 shows therefore an increase of 9 per cent. in the State and 26 per cent. in North Gujarat alone. The weaker talukas with a density of 150-300 show a large increase (wherever there has been no change of class). But the areas with the lowest density have uniformly shewn decrease everywhere except Harij taluka.

74. Possibilities of Expansion—The general conclusion seems to be that the scope of expansion lies between a density of 150 to 450. The under-limit points to excellent reasons why the population cannot advance

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much: forests, unhealthiness of climate, barren soil, inaccessibility, want of industrial possibilities among other reasons. The margin shows the contrast between the crude density on total area and the densities on cultivable and cultivated area of some of these talukas. Ratanpur and Dhari do not show much difference indicating that the scope there is little. But perhaps extension of railways, and facilities for scientific agriculture may improve matters. Okhamandal maintains a high density per each square mile that it cultivates; but that is due to the inclusion of two towns, Dwarka and Beyt, in the calculation of densities. Taking only the rural population, the density on cultivable and cultivated areas is reduced to 67 and 205, respectively, showing that the possibilities of its agriculture are exhausted and that its future belongs to industry or commerce. Songadh is condemned with its malaria whose ravages will always keep down the population. Even now, for its unhealthiness, it maintains a very high density on its cultivated area. Harij alone is progressive and one of the main reasons is that it is at present the rail head of the North Kadi Railway system. An extension further westward to Radhanpur for example may have far reaching results on its population. The total area of these tracts of low density is 1,346 square miles—about the size of the Kathiawad natural division of the State, or 16·6 per cent. of the total area. Here the possibilities of expansion are few. The limit of 450 and above on the other hand marks the critical point beyond which a population mainly subsisting on agriculture cannot advance at least in this State without a serious deterioration in its standards of life. Here also the scope for increase of population is not large. Bhadran and Petlad are as we have seen declining in population. Navsari and Gandevi have increased since 1891 at a much lower rate than between 1872 and 1891.

Taluka	Area	Density	Density on cultivable area	Density on cultivated area
Songadh ..	578	71	244	346
Harij	149	129	147	256
Dhari	294	94	118	134
Okhamandal ..	275	93	126	386
Ratanpur ..	54	74	78	87

Now in regard to the areas with a density between 150 and 450, there is indeed room for expansion. To estimate how far this is possible, a rough test may be suggested. Wherever the difference between density on cultivated and on cultivable areas is about 100 or more per square mile, there it may be said with fair probability that population will expand normally. These talukas are collected in the margin and comprise an area of 2,394 square miles or 29·5 per cent. of the total area. The total area of talukas which have a density between 150 and 450 per square mile is 5,832 square miles, so that even of these portions less than half or only 41 per cent. can be said to be really capable of expansion. It will be seen from the marginal list that talukas from Kahnam, Chorashi, East Kadi, Rasti, Semi-Rasti and Rani areas are represented within the limits where under the test applied above, some expansion in population may be expected. It is significant that the whole of Kathiawad is absent from this list, and indeed from the present agricultural situation there and from the remote possibilities of irrigation, no different result can be expected. An exception can however be made in favour of Kodinar where with better communications and luckier years, an improvement may be expected. The southern villages of Amreli and the fertile strip round Damnagar may show increase, but no large advance in the total population of these talukas need be normally expected in the immediate future.

Talukas	Area	Density	Density on cultivable area	Density on cultivated area
Dabhoi	215	293	333	450
Savli	239	230	264	401
Kadi	333	260	296	399
Kalol	266	335	380	473
Vijapur ..	323	364	433	816
Mehsana ..	239	337	378	497
Palsana ..	157	291	335	485
Kamrej ..	157	272	311	427
Vyara	322	181	318	448
Mahuva	143	269	328	545

75. Is Population outpacing Means of Subsistence?—The question whether from the point of view of expansion the future of Baroda population belongs to agriculture cannot be answered in a statistical study like this, but it may

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be interesting to know whether population is outpacing the means of subsistence. The above paragraph broadly lays down the limits within which expansion is possible and points to particular direction where alone such expansion is probable. Seven out of 10 square miles of the State area can have room for expansion ; and out of these 7, only 3 can be said to hold out any certain hopes of improvement. The true increase since 1872 is only 3 per cent. and with each succeeding decade, the rate of natural increase tends to diminish. It is a doubt whether the normal rate of natural increase will operate with equal force in the coming decades. Hitherto the pressure on population has been relieved by the overflow from high-density areas to areas with much land available for cultivation. In Appendix I, Prof. Vaidyanathan calculates from a study of the last two censuses, that the shifting of the centre of population in Baroda Division can only be accounted for by an increase in the south-east or south, by a decrease in the north-west, or by all these causes co-existing. Similarly for Kadi Division, he concludes that the shifting of the centre indicates either an appreciable increase in the western dry belt, or a large decrease in eastern talukas and a small decrease in the south, or both causes existing simultaneously. These conclusions are confirmed by the actual facts of the movement of population during the decade. So far therefore the State itself has afforded scope for easing the pressure of population by emigration to likely areas within its own limits. Whether emigration to areas outside the State in the near future will be on any large scale will depend on the comparative possibilities of Agriculture and Industry. The labour markets of Bombay City, British Gujarat and Sind will continue to draw out the able-bodied amongst the State population. But it is hoped that the expansion of the textile industry in different places in the Raj within easy reach of the labour supply will tend to diminish this volume of emigration. At present the State is at the threshold only of industrial progress. The possibilities of agriculture however are more difficult to gauge. The question is bound up with such difficult problems as the chances of irrigation in improving the outturn of the soil, the consolidation of economic holdings by the restripping of scattered areas, improved methods in agriculture and finally the law of diminishing returns. In regard to irrigation its limitations especial to this State have been already alluded to. In his *Population Problem in India*, Mr. Pivare Kishen Wattal quotes the findings of the Irrigation Commission of 1901-3, which calculated that only 41 per cent. of the total rainfall in India was normally available for surface flow, of which again no less than 87 per cent. passed to waste in the sea, being carried away by rivers. I am not able to state whether these findings are true of Baroda also, but at any rate irrigation on a large scale is so prohibitive in cost, that it will be many decades before its influence on population can be perceived ; and even then, if the experience of the Punjab Canal Irrigation Colonies is to be believed, while it may afford immunity from famines; irrigation may also spread malaria by producing excessive moisture.

76. Possibilities of Agriculture—The special problem of the consolidation of holdings has a peculiar application to Gujarat which is a land, particularly in its highly fertile portions, of intensely fragmented holdings.* The subdivisions are due mainly to the operation of the Indian law of inheritance under which at each succession the property is subdivided. Agricultural indebtedness is another potent cause of the division of the holding, of which the creditor grabs whatever portion he can secure. A third cause is the coming of new classes of people, mostly thriftless and uneconomic, into the status of peasant proprietors. It has been already mentioned that the number of agricultural labourers has been progressively decreasing since 1901 ; but on the other hand the number of cultivators and receivers of rent from agricultural land (with their dependents) has progressively increased from 634,688 in 1901 to 970,675 in 1911 and to 1,058,182 in 1921. Registered holders in the State have increased from 307,958 in 1910 to 328,160 in 1920 and it is also important to remember along with this increase that registered holdings of less than 5 bighas have increased by 6,350 to 94,747 within the last ten years. So this supplies one clue to the decline in agricultural labour. It may be a good thing for an agricultural labourer to improve his position by setting up as a Khatedar. With the "magic of property" about him he may hope to turn his land—and his own life also—to good account. But he is mostly without staying power

*In the taluka of Petlad, for instance, the total number of plots of land is 90,976 giving 1·2 acre per piece.

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and his holding is more often than not too small to be economic. By a selective process, the superior cultivator is driving the more thriftless of his brethren gradually to the marginal areas. It is a question, therefore, whether the increase in the number of cultivating owners is quite an unmixed good. The table in the margin gives comparative figures since 1901 of variation in occupied area, and total population, and the number of agricultural population supported per acre of occupied land. At first sight it will seem from this table that the increase in total population has not been faster than the increase in occupied area. But the area of cultivable land is 6,399 square miles. The occupied area has now come up to 5,911 square miles, leaving a residuum of only about 488 square miles yet to be leased to cultivation. The average net sown area of the decade, however, is only 4,351 square miles, so that about 1,600 square miles or quite one-fourth of the total cultivable area is normally kept fallow. The increase in occupied area has to be discounted in two ways: in the first place, the motive of land grabbing often induces the ryot to keep as much land as he can under-cultivate: secondly the increase in occupied area is in many places the result of the zeal of the revenue officials who wish to get as much *kudos* as they can out of this additional *abadi*. At any rate the extent of the occupied area may be said now to have almost reached its limit in the State. Remembering what has been written about well-runs and threshing floors (*cide* para 39) one would imagine that there is little scope for further increase in the occupied area. Any further increase therefore in the population will mean that it is going beyond the potentialities of the soil. If figures of the net sown area are to be believed, it will appear from the margin to have already begun to do so. It would have helped the discussion to have accurate figures of production; we could then have seen how far any extension of cultivation had resulted, if at all, in a gradually diminishing return to an increasing amount of labour and expense. Such returns of yield as are available will be utilised in a later chapter. But they are not reliable enough to lead us to conclude that the law of diminishing returns has begun to operate. Enough however has been indicated above to show that a period of intense devotion of national energies to agriculture is now fast giving place to another in which the people, driven by their misfortunes from their passionate attachment to the soil, will strive to seek more and more in a varied industrial life the requisite relief for the pressure of an increasing population on their means of subsistence.

	1901	1911	1921
Variation in occupied area	100	104·45	110.69
Variation in population	100	101·1	108.9
Proportion of agricultural population ..	52	49·3	61
Number of agricultural population supported per acre of occupied land ..	3.37	2·77	2.78

Year	Sown area in square miles
1881–90 ..	4,645
1891–1900 ..	4,247
1900	4,441
1904–5 ..	3,751
1910–20 ..	4,351

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SUBSIDIARY TABLE I.—Density, Water Supply and Crops

Natural Division	Mean density per square mile	Mean density per square mile of cultivable area.	Percentage to total area of: Cultivable area	Percentage to total area of: Netcultivated area	Percentage to cultivable area of: Net cultivated	Percentage to cultivable area of: Double cropped	Percentage of cultivated area which is irrigated	Normal rainfall	Percentage of gross cultivated area under: Wheat	Rice	Bajri	Juwar	Other pulses	Oil seeds	Cotton	Others
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Baroda State ..	**262**	**332**	**78·74**	**53·54**	**67·99**	**2·5**	**3·7**	**33·59**	**1·95**	**5·35**	**22·27**	**22·57**	**3·74**	**9·23**	**25·63**	**9·26**
Central Gujarat ..	368	434	85·43	67·83	79·88	·3	1·3	36·47	·32	12·94	8·92	14·11	4·17	1·52	46·43	11·50
North Gujrat ..	296	339	87·33	53·09	60·79	4·0	7·0	25·61	5·0	1·0	30·0	22·0	6·0	12·0	13·0	11·0
South Gujarat ..	188	340	55·40	40·43	77·02	4·2	1·2	52·81	1·23	12·40	0·19	20·97	8·55	0·96	41·45	14·25
Kathiawad	132	161	81·80	48·82	59·67	3·3	4·2	21·38	2·7	0·30	28·05	26·70	5·4	9·9	24·45	2·5

Note.—Density for Central Gujarat includes the City of Baroda.
Without the City, the density for Central Gujarat is 321.

SUBSIDIARY TABLE II.—Distribution of the population classified according to density

Natural Division	Under 150: Area	Under 150: Population	150—300: Area	150—300: Population	300—450: Area	300—450: Population	450—600: Area	450—600: Population	600—750: Area	600—750: Population	750—900: Area	750—900: Population	900—1050: Area	900—1050: Population	1050 and over: Area	1050 and over: Population
	Talukas with a population per square mile of															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Baroda State	**1,839·5**	**164,924**	**3,922·7**	**928,261**	**1,909·2**	**670,548**	**209**	**102,756**	**183**	**126,723**	**46**	**34,630**	**4·4**	**3,968**	**12·82**	**94,712**
	22·3	*7·8*	*48·3*	*45·6*	*23·9*	*31·5*	*2·6*	*4·8*	*2·3*	*6·0*	*·6*	*1·6*	*·04*	*·2*	*·16*	*4·5*
Central Gujarat exclusive of City ..	..	..	1,236	297,574	406·2	145,176	84	43,327	183	126,723	..	..	..	..	..	..
			64·7	*48·6*	*21·3*	*23·6*	*4·4*	*7·1*	*9·6*	*20·7*						
City	..	..	..	..	..	..	..	..	..	..	..	..	..	..	12·82	94,712
															100	*100*
North Gujarat.	149	19,226	1,394	355,980	1,503	525,372	..	..	..	..	..	..	..	..	..	..
	4·9	*2·1*	*45·8*	*39·5*	*49·3*	*58·4*										
South Gujarat	924	80,728	712	165,585	..	..	125	59,429	..	..	46	34,630	..	..	..	..
	51·2	*23·7*	*39·4*	*48·6*			*6·9*	*17·5*			*2·5*	*10·2*				
Kathiawad ..	766·5	64,970	580·7	109·122	..	..	..	..	..	..	..	..	4·4	3,968	..	..
	56·7	*36·5*	*43·0*	*61·3*									*·3*	*2·2*		

SUBSIDIARY TABLE III.—Variation in relation to Density since 1872

Natural Division	Percentage of variation increase (+) decrease (—): 1911 to 1921	1901 to 1911	1891 to 1901	1881 to 1891	1872 to 1881	Net variation 1872 to 1921	Mean density per square mile: 1921	1911	1901	1891	1881	1872
1	2	3	4	5	6	7	8	9	10	11	12	13
Baroda State ..	**+4·6**	**+4·1**	**—19·15**	**+10·68**	**+ 9·24**	**+ 6·5**	**262**	**250**	**240**	**297**	**269**	**246**
Central Gujarat ..	+3·0	+ 6·65	—21·17	+ 7·29	+ 1·88	— 5·34	368	357	335	425	396	389
North Gujarat ..	+8·2	— ·31	—24·02	+11·15	+16·25	+ 5·91	296	273	274	361	325	279
South Gujarat	+1·46	+11·66	— 5·94	+11·09	+19·19	+41·08	188	186	166	177	159	134
Kathiawad	— ·12	+ 2·8	— 3·74	+24·59	— 8·80	+12·3	132	132	128	133	107	117

Note.— The Density Figures previous to 1921 have been revised according to the latest figures for area. The City of Baroda has been included under Central Gujarat.

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SUBSIDIARY TABLE IV.—Variation in Natural Population

Natural Division	Population in 1921				Population in 1911				Variation per cent. (1911-21) in Natural Population Increase (+) Decrease (—)
	Actual Population	Immigrants	Emigrants	Natural Population	Actual Population	Immigrants	Emigrants	Natural Population	
1	2	3	4	5	6	7	8	9	10
Baroda State ..	**2,126,522**	**232,494**	**220,696**	**2,114,724**	**2,032,798**	**222,957**	**235,523**	**2,045,364**	**+3·4**
Central Gujarat including City.	707,512	102,743	106,622	711,391	686,960	103,179	112,025	695,746	+2·2
North Gujarat ..	900,578	59,613	79,265	920,230	832,162	45,158	84,818	871,822	+5·6
South Gujarat ..	340,372	47,986	33,321	325,707	335,467	50,229	35,014	320,252	+1·7
Kathiawad ..	178,060	34,930	14,266	157,396	178,269	34,931	14,206	157,544	—0·1

Note.—Immigrants to Central Gujarat (excluding city) numbered 74,688 in 1921 against 73,794 in 1911. Birth place returns from two remote provinces are not yet available. In their case, the number of emigrants in 1921 has been assumed to be the same as in 1911. District figures are available for the first time in 1921, for the greater portion of emigrants—Superintendents from Bombay, Central India Agency, Rajputana, and Bihar and Orissa having furnished separate figures as far as possible for divisions. Figures for Baroda unspecified have been distributed *pro rata* among the divisions. Divisional figures for 1911 have been estimated from the figures of 1921.

SUBSIDIARY TABLE V.—Comparison with Vital Statistics

Natural Division	1911 to 1920 Total number of		Number per cent. of population 1911 of		Excess (+) or deficiency (—) of births over deaths	Increase (+) or Decrease (—) of Population of 1921 compared with 1911	
	Births	Deaths	Births	Deaths		Natural Population	Actual Population
1	2	3	4	5	6	7	8
Baroda State	**580,390**	**612,055**	**28·6**	**30·2**	**—31,665**	**+68,040**	**+92,404**
Central Gujarat	170,126	185,524	28·9	31·6	—15,398	+14,325	+25,245
Baroda City	20,443	36,938	21·5	38·8	—16,495		— 5,953
North Gujarat	224,049	229,532	26·9	27·6	— 5,483	+48,408	+68,416
South Gujarat	104,145	102,056	31·04	30·4	+ 2,089	+ 5,455	+ 4,905
Kathiawad	61,627	58,005	34·6	32·5	+ 3,622	— 148	— 209

Note.—Baroda Camp, Vishwamitri Station, Goya Gate Station, Baroda Station and Marshalling Yard have been excluded from this Table as these are not included within the State registrable area.

SUBSIDIARY TABLE VI.—Variation by talukas classified according to density

(a)—*Actual Variation*

Natural Division	Decade	Variation in talukas with a population per square mile at commencement of decade of							
		Under 150	150 to 300	300 to 450	450 to 600	600 to 750	750 to 900	900 to 1050	Over 1050
1	2	3	4	5	6	7	8	9	10
Baroda State	**1891–1901**	**+70,155**	**+39,153**	**—398,852**	**—81,477**	**+78,743**	**—157,786**	..	**—12,640**
	1901–1911	**—19,208**	**+137,707**	**+31,087**	**—59,666**	**—4,412**	..	**+3,658**	**—9,060**
	1911–1921	**—24,922**	**+ 9,460**	**+54,136**	**+59,086**	**—34,343**	**+34,630**	**+ 310**	**—4,633**
Central Gujarat with City	1891–1901	+25,695	—16,338	—43,662	—48,867	+80,636	—157,786	..	—12,630
	1901–1911	—1,228	—14,216	+69,059	+ 209	—6,550	..	..	—4,445
	1911–1921	—24,467	+48,618	+2,722	— 343	—1,285	..	..	—4,633
North Gujarat..	1891–1901	+12,505	+117,649	—301,667	—92,485	..	..	..	..
	1901–1911	+3,442	+87,218	—93,242	..	..	..	..	..
	1911–1921	+3,279	—41,547	+106,684	..	..	..	..	..
South Gujarat ..	1891–1901	+35,635	—59,096	—53,523	+59,875	—1,893	..	..	..
	1901–1911	—26,117	+63,610	+55,270	—59,875	+2,138	..	..	..
	1911–1921	—2,316	+1,490	—55,270	+59,429	—33,058	+34,630	..	..
Kathiawad ..	1891–1901	—3,680	—3,062	..	..	..	..	..	—10
	1901–1911	+4,695	+1,095	..	..	..	..	+3,658	—4,615
	1911–1921	—1,418	+ 899	..	..	..	..	+ 310	..

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SUBSIDIARY TABLE VI.—Variation by talukas classified according to density

(b)—*Proportional variation*

Natural Division	Decade	Variation in talukas with a population per square mile at commencement of decade of							
		Under 150	150 to 300	300 to 450	450 to 600	600 to 750	750 to 900	900 to 1050	Over 1050
1	2	3	4	5	6	7	8	9	10
Baroda State	**1891–1901**	**+50·5**	**+ 5·3**	**—40·5**	**—44·1**	**+90·8**	**—100**	..	**— 10·4**
	1901–1911	**— 9·2**	**+17·6**	**—5·3**	**—57·7**	**— 2·7**	..	**+100**	**—8·4**
	1911–1921	**—13·1**	**+ 1·0**	**+ 8·8**	**+135·3**	**—21·3**	**+100**	**+8·5**	**— 4·7**
Central Gujarat with City.	1891–1901	+100	—5·8	—37·3	—52·9	+149·5	—100	..	—10·8
	1901–1911	—4·8	—5·4	+94.1	+ ·5	—4 ·9	..	..	— 4·3
	1911–1921	—100	+19·5	+ 1·9	— ·8	—1 ·0	..	..	— 4·7
North Gujarat	1891–1901	+100	+61·1	—37·1	—100	..	..	..	..
	1901–1911	+27·5	+28·1	—18·2	..	..	..	..	..
	1911–1921	+20·6	—10·5	+25·4	..	..	..	..	..
South Gujarat ..	1891–1901	+48·5	—37·0	—100	+100	— 5·8	..	..	..
	1901–1911	—23·9	+63·3	+100	—100	+6·9	..	..	..
	1911–1921	— 2·8	+ ·9	—100	+100	—100	+100	..	..
Kathiawad ..	1891–1901	— 5·6	—2·7	..	..	..	..	..	—0·2
	1901–1911	+ 7·6	+ 1·0	..	..	..	..	+100	—100
	1911–1921	— 2·1	+ ·8	..	..	..	..	+ 8·5	..

SUBSIDIARY TABLE VII.—Persons per house and houses per square Mile

Natural Division	Average number of persons per house					Average number of houses per square mile				
	1921	1911	1901	1891	1881	1921	1911	1901	1891	1881
1	2	3	4	5	6	7	8	9	10	11
Baroda State ..	**4·14**	**4·01**	**3·98**	**4·48**	**4·56**	**63·10**	**62·30**	**60·29**	**94·89**	**59·02**
Central Gujarat exclusive of Baroda City ..	3·98	3·91	3·82	4·31	4·30	80·57	78·71	73·98	107·53	76·15
Baroda City ..	3·52	3·47	3·32	3·63	3·64	2,072·30	2,200·2	2,403·85	3,338·0	2,246·08
North Gujarat ..	4·02	3·79	3·82	4·40	4·50	73·48	72·22	71·67	126·75	71·97
South Gujarat ..	4·94	4·93	5·01	5·25	5·27	38·14	37·67	33·12	42·74	30·29
Kathiawad ..	4·52	4·52	4·41	4·68	4·73	29·13	29·14	29·10	51·17	23·02

Note.—The figures for density of houses per square mile for 1911 and previous years have been calculated on the latest figures for area.

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CHAPTER II

THE POPULATION OF TOWNS, VILLAGES AND THE CITY OF BARODA

STATISTICAL DATA

Subject	TABLES		
	Imperial	State	Subsidiary
Towns and Villages classified by Population by Divisions	III	..	I
Towns and Villages classified by Population by Talukas	..	III	..
Towns classified by Population with variation since 1872	IV	..	III
Towns arranged territorially with population by Religion	V	..	II
Age, Sex and Civil Condition by Selected Towns	..	VII	..
Classification of Homesteads by Towns	..	XVIII	..
City of Baroda	..	..	IV
Tenement Census Tables for the City	..	XIX-XXIII	V-IX
Occupation by Selected Towns	..	XXIV	..
Immigrants from Selected Areas by Age and Occupation for the City	..	XXV	..

PART I

Towns and Villages

77. Reference to Statistics.—In the first chapter, the distribution and movement of the whole population have been dealt with. With this chapter we commence with the first of the differentiations, namely the division of people into urban and rural. The main statistical data not actually embodied in the letter-press are summarised above. State Table III gives the details by talukas and also gives particulars of the number of towns and villages with a population between 3,000 to 5,000, while the corresponding Imperial Table III gives only figures by administrative divisions. The Subsidiary Tables are indicated in the above Summary against the particular Imperial Table on which they are prepared. Subsidiary Table III is a somewhat difficult table to prepare. The basis on which it is prepared is explained later on. The question of decline in population in certain urban areas is of great local interest. For this reason, a special table giving the age-constitution of selected towns has been compiled. Along with the general enquiry into the classification of homesteads in the first chapter, figures regarding the standard of house-room in urban areas have also been separately compiled. The Tenement Tables compiled for the City of Baroda are five in number. The nature of these will be dealt with in their proper section.

78. "Urban" and "Rural."—It is necessary to start the analysis of the figures with definitions, for a proper understanding of the extent and variation of urban population is not possible without the knowledge of how towns have been defined from census to census, and what is more important, how the definition has been applied in the actual circumstances of a particular census. A complete analysis would require the exposition of the racial elements and industrial characteristics of the different places, the distribution and density of their inhabitants, their occupational differences, the standard of comfort as shewn in their house-room and in their appreciation of sanitary needs and urban amenities, such as roads, lighting, gardens, municipal conveniences, etc., and finally even a reference to the policy of the State in regard to the encouragement of industries and the growth of industrial or agricultural settlements. A scientific definition of "Town" as distinct from "Country" or "Village" is a task attended with great difficulties. The passage from "Country" to "Town" may be described in general terms as the change from a condition of status to that of contract: the theoretical distinction being, in the words of Whipple, that "the former lead a more individualistic life,

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while the latter lead a more communal life. In cities, for example, water-supplies sewerage systems, food supplies, methods of transportation and various public activities are used in common by all, while in the country each household has its own well, its own garden, its own cesspool, its own means of transportation." Usually it is supposed that this individualistic character belongs pre-eminently to agricultural communities ; and it is therefore argued that the term "Urban" should not apply to those places where the majority of workers belong to agriculture. That supplies one test of townhood. Where the majority of workers are engaged in either industry, trade or transport, there the place may be called a town.* For this purpose a separate table showing the broad division of occupation into classes amongst the total urban population and also in certain selected towns has been compiled. The margin shows the contrast in occupations between town and country in the State, and it shows also incidentally that the selection of towns according to the standard definition corresponds in the main t the distinction usually understood between rural and urban areas. Another test may be suggested whereby not only the contrast between towns and rural areas can be emphasised but also the application of the standard definition can be justified. The standard of comfort according to house-room is a good criterion whereby townhood may also be appraised. The figures will be analysed more in detail presently, but in the meanwhile the marginal table may be studied with advantage. The contrast between rural and urban is striking. In a later chapter (Chapter VIII), we shall find Literacy to be another striking feature of Urbanisation. In the meanwhile the above ratios prove that generally the definition settled for towns in the Indian Census approaches the reality.

	Proportion of workers engaged in	
	Agriculture and pasturage	Industry and Commerce
State ..	66	19
Urban ..	24	41
Rural ..	77	11

	Proportion of 1st class houses to 1,000 classed.	Proportion of 1st and 2nd class to 1,000 classed.
State ..	39	198
Urban ..	93	453
Rural ..	12	123

79. Standard Definition of "Town" differently applied from Census to Census.—The standard definition may now be introduced. The Census Code defines a "town" to include—

(1) every Municipality ; (2) all civil lines not included within municipal limits ; (3) every cantonment ; and (4) every other continuous collection of houses inhabited by not less than 5,000 persons which the Provincial Superintendent may decide to treat as a town for census purposes.

From the above definition, it appears that the arbitrary division by population is qualified by the possession of municipal institutions ; so that all municipalities of whatever size are to be regarded as towns and it is only in respect of other areas with a population of 5,000 and over, that discretion is left to the local superintendents to pick and choose from among places which are considered to have a distinctly urban character. It appears that this definition which has been set as a standard at least since 1901, has been differently applied by Census Superintendents both in 1901 and 1911. In 1901 five places, though under the 5,000 limit and without municipal institutions, were treated as towns because they were considered "important trade centres." Four of these five however were rightly dropped out of the list of towns in 1911 ; but the fifth, Bahadarpur, was continued as a town, for no reason apparently except by attraction to its neighbour, Sankheda, which was a municipality. Again, both in 1901 and 1911, the Census Superintendents decided to treat as towns some headquarters of talukas, even though without municipalities and below the 5,000 limit, neglecting others. Atarsumba and Tilakwada thus became towns in 1901 and 1911, while Palsana, a larger town than either and also a Mahal centre, was ignored. The mere fact that the State has selected a particular village for the headquarters of its Vahivatdar (taluka officer) and built a *kacheri* for him is no reason for raising a straggling collection of mud-huts to the dignity of a town. Townhood thus became a matter of flux and even

* It is usually in this sense that the distinction is understood in Gujarat. An urban area is usually known as a *Kasba* where the occupations are varied and the arts (*kasab*) obtain. A rural area on the other hand is a *mauza* where agriculture is the dominating occupation.

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of agitation. Lively agitation went on in some places before the recent census, notably in behalf of a certain village in Navsari taluka which has never yet been treated as a town. It was decided therefore to apply the definition strictly. All municipalities of whatever size were included as towns. All non-municipal areas with a population of less than 5,000 were excluded from the list, even though some were taluka headquarters. Tilakwada was thus scrapped in 1921 ; Atarsumba was continued, because in the meanwhile it had been given a municipality. Palsana had also become a Municipality in the decade and was therefore added to the list of towns. Five other villages—Dharmaj, Mehlav, Pij, Makarpura, and Variav—were also endowed with municipalities (Vishisht panchayats) and have thus attained the dignity of towns. The possession of municipal institutions is a fair enough criterion although it has its anomalies : it corresponds roughly for want of better things to the " charter " of European and American towns. It points at least to the minimum of a sanitary conscience amongst the inhabitants. It points also, apart from communal privileges, to the communal use of public utilities like roads, lighting and conservancy. In regard to non-municipal areas with a population of over 5,000, the problem so far as the recent census was concerned was simple. The discretion referred to in the definition was necessary in only one case. There were seven such cases in 1901. They were all treated as towns. In 1911, five of these became municipalities and thus passed into towns. Two—Nar and Ladol—were continued as towns because apparently they have been treated as towns since 1881. In 1921, these became towns formally, because they were endowed with municipalities. Unava passed the 5,000 limit in 1921, and it was therefore the only case where the question whether to treat it as a town had to be decided. It is true that it is mainly an agricultural town. But it is on the main route to Delhi, and together with Unjha on the other side of the Railway line forms a large urban centre. Compared to similar places like Balisna, Umta, and Valam which had been treated as towns in four censuses out of six, Unava has a right to be included as a town. It was therefore decided to class it as such. We find therefore in 1921 a total of 48 towns classed according to the categories of the above definition, as in the margin. In the 45* municipal towns are comprised 32 taluka headquarters. Of the thirteen other municipal towns, 8 are in Baroda division (six being in Petlad taluka alone) ; 3 in Kadi and two in Navsari *Prant*. It is part of the policy of the State to extend municipal institutions all over the State. In 1901 there were 31 municipalities. In 1911, there were 37. It has now been decided to establish municipalities in all towns with a population of 3,000 and over. There are 43 places with a population of three to five thousand. Fourteen of these are yet without municipalities. These are the places that hope to be raised to townhood through municipal institutions in the coming decade.

Kind	Number	Population
City	1	91,778
Cantonment ..	1	2,934
Municipal Towns	45	341,010
Towns without Municipalities	1	5,101
Total Towns ..	48	440,823

80. Types of Towns—Industrial, Residential, Agricultural and Distributive.—If discretion were left to the Superintendents also in regard to municipalities, certain municipalities in this State would have to be omitted from the list of towns, as they are only overgrown villages. State Table XXIV gives the occupations by main classes of certain selected areas. It takes 23 towns and divides them into two classes, the first class containing industrial and urban areas, where the workers supported by agriculture and pasturage are outnumbered by workers supported by industry, transport and trade ; the second class containing such towns as Vadnagar, Unjha, Sojitra, Ladol, Bhadran, Unava and Dharmaj where the agricultural workers predominate. So we get a rough division into industrial and urbanised towns, and those towns which are merely agricultural and distributive. There are the typically industrial centres or towns with industrial possibilities like Petlad, Dabhoi, Sidhpur, Kalol, Bilimora, Kodinar and Karjan. There are busy market towns and Railway centres like Amreli, Padra, Navsari, Visnagar, Mehsana and Savli. Old towns with historical interest and old established industries and

* In three of these towns, municipalities are in process of formation

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settled urban communities are Patan, Sinore, Gandevi, Sankheda, Kadi and Kathor. Dwarka and Beyt are temple-towns. This enumeration leaves about 25 towns which are agricultural and distributive. The margin gives the distribution of the urban population according to these classes. The above classification, I am afraid, gives a somewhat cut and dried character which does not in reality attach to the towns. Among industrial centres there are found towns which are very old established urban areas, like Dabhoi and Sidhpur. Similarly agricultural and distributive towns have among them some places like Vadnagar, Vijapur, Sojitra, Kheralu, Unjha and Songadh which are very old towns of great historic interest. Again, even such pronounced agricultural towns as Sojitra have some kind of cottage industries, and Vadnagar has its ginning factories. Lastly Dwarka is beginning to look up industrially, and Beyt may yet have a future as a seaport. For all these anomalies, the above classification may be allowed to stand as roughly representing the distinctive character of the different types of towns in the State. Agricultural and distributive towns form only 29 per cent. of the total urban population. The first three classes of towns contain on the other hand nearly half or 47 per cent. of the total. Excluding the City and the Cantonment and taking only the population of towns proper, the porportions in regard to agricultural and non-agricultural towns are 37 and 63 per cent. respectively.

Kind	Number	Population	Proportion to total	Average population
Industrial centres ..	7	71,764	16	10,252
Market towns and Railway centres ..	6	76,629	18	12,772
Old established urban areas	6	58,266	13	9,711
Temple towns ..	2	11,945	3	5,973
Agricultural and distributive towns ..	25	127,567	29	5,100
City and Cantonment	2	94,712	21	..
Total of towns	48	440,823	100	9,184

81. Average Population of Towns.—The average population of an agricultural and distributive town is only 5,100 ; while the towns of the other classes combined (except the City and the Cantonment) give an average of 10,410. Market towns and industrial areas give an average of 10,252 and 12,772 respectively. It is interesting to compare these averages with the general average population per town (*vide* Subsidiary Table I). The general average is, taking in the population of the City and the Camp, 9,184 for the State. Without the City and the Camp, the general average is only 7,524 per town. The temple-towns and the agricultural and distributive towns are well below this average. Industrial and market towns are above this average ; so are also old established urban areas. The average population of towns is the largest naturally in Central Gujarat which includes the City. Excluding the City, however, the average comes down to only 6,117 in that division. North Gujarat which includes the historic towns of Patan and Sidhpur, and other old settlements has an average of 10,458.

The normal size of a town in Baroda State is not large compared to other provinces and States. The general Indian average (including cities) in 1911 was shewn to be 13,817. In the Bombay Presidency, the average population per town is 16,541; and in British Gujarat, the presence of large cities like Ahmedabad, Surat and Broach forces up the average of town population to 21,269. In Indian States the average size of towns was 9,887 in 1911.

82. Proportion of the Urban Population.—But apart from the size of individual towns, there is no doubt that Baroda is one of the most urbanised areas in India. 207 per mille of its population reside in towns in the State. The proportion is a little higher in the Bombay Presidency ; and Ajmer-Merwara and the Indian State in Assam have also slightly higher ratios, but no other province or State in India approaches this State in this respect. Comparison with other countries beyond India is vitiated by the different circumstances under which places are classed as towns in different countries. In Ceylon, for instance, only cities and local board areas are taken as towns. No population limit is laid down apparently. In England and Wales, the population of "Urban sanitary districts" is considered urban. In Scotland, the "Urban" population is defined as the population of localities that contain over 1,000 persons and are either burghs, special scavenging districts or special lighting districts. Under this definition the urban proportion in

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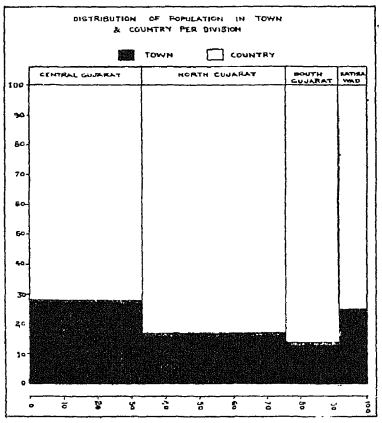
Scotland is 75·4 per cent. In the United States, a population limit of 2,500 was fixed for the Census of 1910. The margin however collects the ratios, on the latest figures at hand, for these countries, which may be found interesting. Within the limits of Baroda State, the proportion of 207 per mille, however, is by no means uniform. It varies from 281 in Central Gujarat to 141 in South Gujarat. Kathiawad, which contains Okhamandal *Prant* where nearly half the population resides in the two towns of Dwarka and Beyt, has a relatively high ratio of 241. The accompanying diagram shows the total urban and rural population of the State in the different divisions.

Country	Proportion of urban population to 1000 of total
England and Wales..	780
Scotland	754
Ireland	335
United States ..	463
Ceylon	130
India	95
Bombay	211
British Gujarat ..	259
Baroda	207

Coming to the natural areas within the divisions the most urban part of the State is of course Vakal, which contains the capital city. Without the City, however, its proportion dwindles down to 70. Charotar has the largest number of towns for its area. The margin arranges the natural areas according to the proportion of urban population. In the Okhamandal part of the Kathiawad sea-coast, the urban proportion rises to as high as 469 per mille. The rural density in this part being only 50 to the square mile, here the growth of the towns has been as already pointed out* almost entirely at the expense of the country side, which is being gradually depopulated.



83. Towns classed by Population.—Subsidiary Table III gives the ratios for towns classed according to population. The highest class of town (100,000 and over) ceased to exist since 1901. The City of Baroda belongs to the second class (50,000 to 100,000). The next class (20,000—50,000) is represented by only one town, Patan. The largest proportion of the urban population belongs to towns of the fourth class (10,000—20,000). 30 per cent. of the total urban population reside in towns of this class. The City of Baroda and the town of Patan between them absorb 27 per cent. of the urban population. 17 per cent. reside in towns with a population below 5,000. Of the 48 towns, the largest number (21) belongs to the lowest class (under 5,000). 16 have a population between 5,000 to 10,000

Name of Natural area	Number of towns	Proportion per mille of urban population
Vakal ..	4	437
Charotar ..	8	311
Kathiawad Sea coast	3	296
Rasti ..	6	253
Middle Kathiawad..	2	237
East Kadi ..	10	183
Kahnam ..	3	165
West Kadi ..	3	160
Kathiawad scattered areas ..	1	149
Chorashi ..	4	108
Trans Sabarmati ..	2	90
Rani Mahals ..	2	70

84. Variation in Urban Population.—There are various ways of finding out the variation in the urban population. One is to take the population of the areas considered as urban in one census and to see the variation in those areas in the previous census. Another way is to consider the variation from the point of view of the preceding census only. The marginal table has been prepared on the former basis. The present urban population constitutes 21 per cent. of the total

* *Vide* para. 71, Chapter I.

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	Population of 1921	Increase in 1921	Percentage of the population	Percentage of the increase
State	2,126,522	93,724	100	100
Urban population.	440,823	13,642	21	15
Towns excluding City and Cantonment ..	346,111	18,275	16	20

population and yet it only contributes 15 per cent. towards the total increase. This circumstance is due no doubt to the inclusion of the City of Baroda, which has been declining in population since 1891. If we exclude the figures of the City and Cantonment, the rate of increase in the urban population rises. The urban increase then becomes 20 per cent. of the total increase although the towns proper contribute only 16 per cent. towards the total population. The progress therefore in the towns proper has been relatively greater than in the country. In the section on Movement of Population in the previous chapter, enough has been written about the influences that have operated with particular reference to the state of things since 1901. The immediate result of the great famine of 1899-1900 in regard to the urban areas was that famine-stragglers from the villages crowded into towns, and therefore though the urban population did decrease, it did not decrease so largely as the general population in 1891-1901. Taking the population in 1891 on areas regarded as urban in 1921, the decrease was only 6·6 per cent. as against a general decrease of 19·2 per cent. In 1911, the conditions tended towards the normal, and there was again a drift back towards the country side. Against general increase of 80,106 in the total population recorded in 1911, there was a decrease of 36,173 in urban areas. In 1921, the increase registered in urban areas was 13,642. The increase though small indicated an opposite tendency of people deserting the country for the town. For one thing, the economic stress of recent years has led to much insecurity of life and property in villages. There is therefore a natural desire on the part of the rural population to seek shelter in the towns. In certain places, where tillage has seemed unprofitable, stragglers have crowded into towns to seek livelihood in untried fields of industrial labour. The recent industrial development has given a fillip therefore to this kind of migration to towns. Wherever there are openings of this kind, towns have increased largely in population. In Kathiawad, where the urban areas have remained identical since 1891 and a comparison is therefore possible, the tendencies above indicated are strikingly illustrated as in the margin. Against a general decrease in population of 4 per cent. in 1901, there was an increase of 10 per cent. in the towns; in the next decade, towns show decrease against a general increase of 3 per cent. In 1921, on the other hand, the towns show quite a large increase while the general population is almost stationary. All the six towns show increases in this division—Dwarka particularly. The recent establishment of a cement factory there has attracted labourers who have flocked in from the surrounding villages.

Urban population in Kathiawad		
Census Year	Urban population	Variation since 1891
1891	40,568	100
1901	44,724	110
1911	41,434	102
1921	43,861	108

85. Subsidiary Table III.—*Variation in towns classified by population.*—In the other divisions, no such exact comparison is possible; as has been stated already the difference in the application of the definition of "town" and "village" has led to the inclusion of certain places as urban at one census, and dropping them at another. But even if the definition were strictly applied proper comparison would not have been possible, as the marginal areas would always have been changing from one side to the other from time to time. Subsidiary Table III has been therefore prepared on the basis of the towns *as classed at the previous census*; so that the actual variation on the population of areas treated as urban at one census may be estimated at the next census, irrespective of any change of status, which any of their number may have suffered at the latter date. Calculating on this basis even, we get the proportions which confirm the conclusions stated in the previous paragraph regarding the movement of urban population. In 1901 the urban areas of 1891 showed a decrease of 6·7 per cent. In 1911, the towns of 1901 showed a decrease of 7·7 per cent. In 1921, there was however an increase of 3·24 per cent. There would have been a larger increase if the City of Baroda shared the other towns' rate of progress. If we exclude the City and Cantonment, the rate of increase in

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other towns is 5·8 per cent. or even higher than the general rate of increase in the State.

The same table gives the variations in towns classified by population. In some cases—where the element of congestion enters—the analysis of figures of variation in towns classified by population reveals some features of interest. In Baroda State, however, these figures call for no special remark. The towns in the two highest classes in existence in the State—namely, the City of Baroda and the town of Patan—have been indeed progressively decreasing in population ; in the case of Patan, this decline has been continuous since 1881. But the decline in these two places is not on account of their size of population but for other reasons which will be stated at their proper place. In regard to the other classes nothing more need be said except that they all more or less illustrate the tendencies above set out in regard to the movement of population in towns since 1891. As to towns which are more pronouncedly urban than others, namely the towns in the class of 10,000—20,000, these tendencies are more marked than elsewhere. Thus in 1901, while the State population declined by 19·2 per cent. and the towns decreased by 6·7, this class of towns only declined by 3 per cent. Again in 1911 when the towns generally showed a decline against an increase in the general population, this class of towns showed the greatest decline. In 1921, however, the class of 5,000—10,000 shows the greatest rate of increase. The class of 10,000—20,000 also shows increase in this census.

86. Variation in Coincident Urban Areas.—The variation in urban areas from the basis of the present census and also from the point of view of the previous census has been considered. Both points of view however are somewhat defective, for both are liable to take in the population of places which are regarded as villages in one or other of the two censuses compared. It will be useful to exclude these marginal areas from the crude variations and consider the changes in population (and the rate of variation therefrom) in the places that have been treated continuously as urban since a particular date. The margin gives the present figures and the variations per cent., in these coincident areas (excluding the City and the Camp). A word of explanation is needed. Since the last census, Vasopura, a suburb of Vaso town, has been separated and constituted into a separate village. So the population of Vasopura in 1911 has been deducted from the coincident urban population of 1911. Similarly, since 1901, the village of Kanpura has been separated from Vyara town ; but as separate figures for Kanpura as well as Vasopura are not available for 1891, the present figures for those villages have been *added* to the urban total for 1921 of the population of areas that are coincident since 1891. Since the last census, 39 towns have been continued in the urban list, besides the City and Camp of Baroda. The increase in these areas is 6·6 per cent. Taking a longer space of time, since 1891 the number of places continuously treated as urban is 33 ; and the variation in these urban areas is a decrease of 8·2 per cent. The general population has decreased by 12 per cent. in that period. Thus the general position of towns in regard to population is more favourable than the rural areas.

Number and present population of places continuously treated as urban						
	Since 1911			Since 1891		
	Number	Population in 1921	Variation per cent	Number	Population in 1921	Variation per cent
Coincident towns excluding City and Cantonment ..	39	321,583	+6·6	33	307,496	—8·2

Taking the divisions separately, we see that in Kathiawad, where the general population has decreased since 1891, the coincident towns in 1891-1921 show an increase in population from 40,568 to 43,861. In South Gujarat the town population in coincident areas has increased from 40,100 to 42,978 or by 7·2 per cent., the divisional increase being 6·9 per cent. Since 1911, the population of the coincident towns in that division has increased from 39,900 to 41,350. To this increase may be added the increase in Desra village, which may be considered a part of

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Bilimora, so that the total increase in the typically urban areas in South Gujarat in the last ten years is 2,483. The total census increase in the whole division is only 4,905, so that quite half of this increase is in the urban areas of this division. In Central Gujarat excluding the City and Cantonment, the population of its nine coincident towns has decreased by 7,461 or 8·8 per cent. to 77,580 in thirty years. The decline in population during the same period in the division is 12·5 per cent. In North Gujarat, there are 13 places which have been continuously urban since 1891. The decline in population of these towns amounts to 15·5 per cent., the divisional decrease being 18 per cent.

87. Variation in Urbanisation.—Having seen the rate of increase in urban population, let us see how far urbanisation may be said to be on the increase or otherwise. For this purpose, the figures for urban population in 1911 will have to be revised according to the stricter interpretation of the definition in 1921. Therefore taluka headquarters which did not possess municipalities and were below the 5,000 limit will have to be omitted. Thus Bahadurpur, Tilakwada and Atarsumba should be dropped from the list. The true urban population for 1911 would thus amount to 397,662. The urban population in 1921 is 440,823. The proportion of true urban population in 1911 was 196 per mille. The proportion in 1921 is 207, showing there are now 11 more town-dwellers per thousand than ten years ago.

88. Variation in Types of Towns.—A truer indication of the variation in urban population is found in the increase in the populations of those towns that have been classed as either industrial, or with old established urban characteristics. In this category all those towns that are not agricultural and distributive excluding the City and the Camp there are 21 such towns. In these towns, the population has increased from 203,659 in 1911 to 218,604 in this census, or by 7·3 per cent. A table is given in the margin whereby the different constituent elements in the population are compared in the two censuses. The City of Baroda alone shows a big decline. The rest of the State—towns, and even rural areas—have increased at greater rates than the State as a whole. The non-agricultural towns have generally improved faster than the more rural towns and even this rate of increase would have been faster if the town of Patan had not declined in population. Taking the towns by their types of population we find that the industrial towns have shewn the greatest progress, namely 17·7 per cent. increase in population. The trade marts and Railway centres show an increase of 7·7 per cent. The two temple-towns show a large increase of 17 per cent., Dwarka for its Cement Factory, and Beyt for an excess of pilgrims. It is not surprising that the industrial towns have shewn the largest increase ; but the special increase of 74 per cent. in Dabhoi town is discounted by the fact that in 1911, a severe epidemic of plague drove the inhabitants of that town to its outskirts ; for this reason the rural population in Dabhoi taluka showed an increase of 31 per cent. as against a general increase of only 12·2 per cent. in that taluka in 1911. The increase in Bilimora is even more striking when we take into account the figures of its suburb, Desra (counted as a separate village) which has increased from 925 to 1958. With Desra, the population of Bilimora has increased from 7,387 to 9,279 or by 25·6 per cent. The opening of the Sugar Factory and Mangalore Tiles Factory in the neighbourhood of this town has given a fillip to its population. Its possibilities as a river port are still in the making. A large scheme of town-extension is in hand. In the meanwhile a large cotton mill is also being established. In the next decade, this town and Kalol are likely to grow largely in population. The seven industrial towns all show increases in the decade. Four out of these seven show an increase in population since 1891. The other three are only very little short of the figures of that date. Of the trade marts and Railway centres, the largest increases are recorded by Padra, Navsari Mehsana and Savli. Visnagar is the only one of this number that has declined

Class	Population in 1911	Population in 1921	Per cent
Coincident towns ..	399,609	416,295	+6·6
Non-agricultural towns.	203,659	218,604	+7·3
Agricultural and distributive towns ..	96,605	102,979	+6·6
City and Camp of Baroda	99,345	94,712	—4·6
Rest of Population	1,633,189	1,710,227	+4·7
Total ..	2,032,798	2,126,522	+4·6

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in population. The increase in Navsari is however more apparent than real. There was plague in Navsari town and the neighbourhood about the census date in 1911 ; and there was a dispersal of people in consequence. Since 1891, however, Navsari shows a satisfactory increase of over 19 per cent. It is, next to the City, the most urban of Baroda towns. Its pleasant climate makes it a holiday resort for pleasure-seekers, mostly from Bombay, in the summer. The Navsari "season" commences about the beginning of November ; the census figures would represent the summer population at the end of the season. The increase in population of this town is not shared by the Parsi and Jain communities which have there as elsewhere in the State declined in numbers. The increase in Mehsana is due in a great measure to the removal of the District Police headquarters from Kadi to this town during the decade. Centrally situated, it is the centre of the net work of the Kadi *Prant* railway system and has therefore a large Railway population. It produces little by itself but has a large goods traffic. The increase in Amreli town is, according to the local authorities, somewhat less than their expectations. Within recent years the town has been largely extended. It has now three ginning factories, and as a central market, it carries on a large trade. There has been also an active movement of people from villages to that town for settlement and security. The increase in Padra town shows that the set-back in the last census was only temporary. The increase in Savli town is part of the large increase in that part of the State. Savli is the commercial centre of a large group of villages and carries on a considerable trade in grain and cattle.

Coming now to the class of *old towns and well established urban settlements* we have only one out of the six in this class that is at all progressive, namely Kadi town. The population has progressively declined in these areas from 1891. The total decrease since 1911 is about 5 per cent. The most noteworthy instance of continued decay is seen in Patan, the old historic capital of Gujarat. Sinore is the only decaying town in Kahnam. There was indeed an increase here in 1911, but apart from that, the decline since 1881 is continuous. Gandevi registered an increase in 1911, but that was due, as Rao Bahadur Govindbhai explains, to the presence of large numbers of people from the outside at a Jain religious gathering on the census day. The competition with Amalsad and now with Bilimora has contributed to the decay of this town. Kadi town, inspite of its adverse fortune of losing the dignity of being the *prant* headquarters, has now begun to increase. The Police exodus to Mehsana, of which mention has been made above, should have led to a decline in numbers but the growth of ginning factories and the development of industrial possibilities have led to a real increase in the population of this old town.

Of the 25 *agricultural and distributive towns*, 15* show progress since 1911 and seven only, since 1891. The largest individual increases in this class of town have happened in Vijapur, Unava, Unjha and Vadnagar, all in East Kadi. The increase in Vijapur is largely due to the inclusion in this census within the town limits of 4 hamlets which were treated as separate villages in 1911. The population of the town proper has only increased from 6,408 to 7,319. Unjha has now a ginning factory, and may owe its increase to its influence. The increase in Vadnagar may be due to its ginning factories, but the number of its inhabited houses has actually declined since 1911 from 3,867 to 3,521. This town has been decreasing in population ever since 1872 except for a small increase in 1891. It is now to be hoped that Vadnagar will be one of the progressive towns in Kadi.

* In this calculation, the population of Vasopura has been deducted from the figures for Vaso in 1911 and the population of Kanpura has been added to the figures of Vyara in 1921.

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Taking the three main classes of towns we find as in the margin how the progressive character of a town is essentially dependent on its industrial possibilities and secondly on the fertility of the soil around it. This last point is better illustrated in the next paragraph.

Class of town	Number of towns	Number of towns which are progressive since	
		1891	1911
Commercial and Industrial ..	13	8	12
Residential and Religious ..	8	1	3
Agricultural and Distributive	25	7	15

89. Decaying Towns by Natural Areas—Taking now the decaying towns, let us see where such decay is most evident. The margin gives the statement per each natural area. It is very instructive to find that in areas of high density the proportion of decaying towns is the largest. Charotar is the most conspicuous example. Compared to 1891 all its towns have decayed, and since 1911, only 3 out of its 8 have shown progress. In the Rasti talukas of Navsari *Prant*, similarly, the proportion of decadent towns is large. Kathor and Variav contain large settlements of rich Musalman Vohoras, who have built fine houses for themselves there, but prefer to go outside for trade and commerce. Navsari and Bilimora are the only truly progressive towns in this area.

Natural area	Number of towns in all	Number of towns which are decaying since	
		1891	1911
Charotar ..	8	8	5
Vakal*	2	1	..
Kahnam ..	3	1	1
Chorashi ..	4	2	1
East Kadi ..	10	7	2
West Kadi ..	3	3	1
Trans Sabarmati	2	2	1
Kathiawad middle block..	2	..	1
Scattered areas	1	..	..
Coast areas ..	3	2	..
Rasti Navsari ..	6	4	3
Rani Mahals ..	2	..	1

East Kadi, another area of high density, has a large proportion of its towns showing decrease since 1891. But since 1911, an improvement seems to have set in owing to the opening out of industrial possibilities at Sidhpur, Kalol, Vadnagar and Mehsana. The increase in town areas in Kathiawad seems general, but that is due largely to the scattered character of the territory, the isolation of the towns and the attractions they offer for security from lawlessness and violence. The broad conclusion seems to be that excepting industrial towns, and urban areas generally in Kathiawad, the rise and fall of towns in the State are correlated with the pressure of population on the means of subsistence.

Patan and Visnagar. The decline of two individual towns deserves separate notice. Patan has decreased continuously from 32,712 in 1881 to 27,017 in 1921. Even in the normal decade, 1881-1891, this town did not share in the general progress of population in the State. It was suggested in the last Census Report that the decrease in population of this town is explained by the proportion of the sexes which was in favour of females, there being 1,003 females to every thousand males. This preponderance of females does not by itself prove that the population is decreasing. This preponderance is a normal feature in many European countries where the population is far from being stationary. The true indication is offered by the figures of age and civil condition which have now been compiled for the first time for all towns in the State and separately for selected individual towns. The figures for Patan show that there are only 808 married males to 1,000 married females of the age-period 15-40 which shows emigration of adult males. The birth-rate therefore rule slow. The number of immigrants from beyond the district of enumeration is only 1,527 or 5·6 per cent. of the total population of that town while the immigrant ratio for the Kadi *Prant* is 6·6 per cent. There is therefore presumably no gain through migration. On the other hand, the loss through migration—if local report is to be relied on—is continuous and increasing. All the three main religions—Hindu, Jain and Musalman—that are represented in this city show decreases. The old handicrafts have decayed and no longer attract the custom of the classes. It is to be remembered that

* Excluding the City and the Camp.

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the decline in Patan town is inspite of an increase in Patan taluka, which has risen by 4·3 per cent. in the decade. Plague was particularly virulent in this town in 1917 and influenza in the next year exacted a heavy toll. Inhabited houses have decreased, by 863, to 7,730, or at a faster rate than the population.

Visnagar is another town which has been continuously declining since 1891, when its population was 21,376. It has now dwindled to 13,855. The number of inhabited houses has decreased from 4,520 to 4,175 within the last ten years. The number of married males aged 15-40 to 1,000 married females of corresponding age is 799, which is even a lower proportion than that of Patan. The rate of decrease, it may also be pointed out, is also greater in this town than in Patan.

90. Sexes in Towns—There are 92 women to 100 men in the population of towns, while in the State as a whole, the proportion is 94 women to 100 men. In urban areas therefore the men outnumber the women to a greater extent than in the State as a whole. In the urban population as constituted in 1911, there were 93 women to 100 men; while the sex-ratio for the State showed one woman less. In the decaying towns as we have seen there is a greater strength of women. The sex-ratio for the age-period 15-40 is 906 females for all towns ; and for the whole State, 923 females per 1,000 males respectively. In European towns the proportion of females is larger, as pointed out in the last India Census Report (p. 40), than in the general population. In 1911, this was more or less the case in this State. In 1921, however, the proportion of women in towns is less than in the general population. It was assumed in the last Baroda Report that towns where the sex-ratio is in favour of males are progressive. If this be true, towns in 1921, are better advantaged in this respect than towns in 1911. But all that one can say is really that a smaller proportion of women points to immigration and greater industrialisation. And as both these are factors of progress in population, the towns look to be more progressive in the future.

In regard to sex proportions, in urban occupations, it is also interesting to note that among workers in towns, industries show a preponderance of males to the extent of 1,000 males to 405 females ; in trade, male workers are three times the number of females ; while amongst domestic servants, the female workers outnumber the male.

91. Summary—The census of 1921 shows that the tendency noticed ten years before of people returning to the villages has given place to the opposing tendency of people flocking back to towns. Excepting the City and Cantonment of Baroda and the town of Patan, thirty of the remaining forty-five towns have shewn increases since 1911 at a much higher rate than the general population. The increase in urban areas in Navsari *Prant* accounts for half the increase in that *prant*.

92. Density of Towns—Any comparison with the density figures of previous years for the towns of this State is vitiated by the fact that the formal area of the town site as recorded in the revenue registers did not correspond at least in regard to the bigger towns to the true residential area. For instance the area of Patan was shewn in the records to be only 478 acres or three-fourths of a square mile. The area of the Baroda Camp is as we know only one square mile ; and anybody who knows Patan at all will agree that the formal area which makes the town out to be smaller than the Camp in size cannot be true. Enquiries were therefore instituted in regard to certain large towns and other places where expansion was likely and it has now been found that the true area in many places such as Patan, Navsari, Sidhpur, Dabhoi, Petlad is much larger than the formal area set apart in the Revenue survey papers for the town sites of these places. It is not possible however to estimate the true area of the towns in previous censuses. Under these circumstances, any proper comparison with 1911 is not possible. The density figures for this census however have been compiled according to class of population and secondly by natural areas. In the first place, the densities of certain individual towns are given in the margin. On the whole residential towns like Navsari and Patan appear to be far from overcrowded. On the

Name of town	Area in acres	Density per acre
Patan ..	735	37
Navsari ..	694	28
Amreli ..	319	56
Bilimora ..	103	71
Petlad ..	228	66
Dabhoi ..	312	51
Padra ..	112	74
Kalol ..	92	79
Dharmaj ..	46	104

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other hand industrial areas like Bilimora and Kalol tend towards congestion; and it is also significant that in highly developed agricultural communities like Bhadran and Dharmaj there is overcrowding. Taking now the towns by classes (and leaving the City out of count) we see that in the largest towns, the density is lowest. It is at its maximum in class V. Taking the towns (with 10,000 and over), the density is 45·8 per acre. The average density of towns in the State is 49·7 per acre. The average area of a town is 151·5 acres. Distributing the towns according to the natural areas to which they belong, we see in the margin where the natural areas have been arranged according to order of density of their towns that Charotar is not only the most densely populated part of the State but it has also the most congested urban population. The comparatively low density of Rasti towns of South Gujarat is due to Navsari town. Similarly, Patan brings down the average of West Kadi. Generally however it will be seen that this order of density of their towns corresponds more or less to the order of density of these areas.

Class	Area in acres	Density per acre
III.—(20,000–50,000) ..	735	37 } 46
IV.—(10,000–20,000) ..	2,785	48 }
V.—(5,000–10,000) ..	1,795	63
VI.—(Under 5,000) ..	1,654	44

Natural Area	Area of towns in acres	Density per acre
Charotar	674	79
Vakal	150	67
East Kadi	1,615	60
Trans-Sabarmati	123	56
Kathiawad middle block ..	415	53·1
Kahnam	482	51
West Kadi	1,068	44
Kathiawad Coast	448	41
Chorashi	405	40
Kathiawad scattered	97	36
Rasti	1,173	35
Rani	319	22

93. Classification of Homesteads—From the consideration of densities in towns, one naturally passes to study the conditions of their house-room. The nature and limitations of the special enquiry into the standard of Comfort in house-room have been amply referred to in the opening chapter. The statistics were there given for the State as a whole by natural divisions. The figures for towns have been separately compiled in State Table XVIII, where they may be studied in detail. The general results can only be given here. Of the three categories of houses, those tenements which give room space of only one living room per family of three adult persons are the most effective criterion of the economic condition of the country. In the State as a whole, 80 per cent. of houses belong to this margin of poverty. In the urban areas, the percentage of such houses is 55. That is to say, in towns, the first two classes absorb 45 per cent. of the total houses classed. In this enquiry the Cantonment of Baroda was not included. The City of Baroda naturally tops the list in regard to the comfort of its house-room. Of the other 46 towns, only twelve (indicated in the margin) exceed the above general average of 45 per cent. It is significant that the highest ratios of comfort are found, not in industrial or growing towns, but in highly developed agricultural settlements like the Charotar towns, or else in old towns like Sinore or Visnagar and other places where the presence of educated communities who prize material comfort like the Vohoras and Parsis forces up the proportion of better class houses as in Variav and Bilimora. But on the other hand, the wealthier and more enterprizing of these communities are wont to build houses in their native places, which they visit but rarely, preferring to reside abroad on trade or commerce. The result is that many excellent residences in Sidhpur, Kathor, Petlad, Patan and such like places remained empty and in that way failed to get classed at the time of the enquiry. This is one reason for the comparatively low proportion of first and second class houses in Sidhpur (213), Navsari (419), Kathor (411), Patan (452) and Petlad (153). Industrial areas generally show a low ratio (except Dabhoi and Bilimora). Administrative headquarters like Mehsana and Navsari take a fairly high place, but on

Name of Town	Proportion of 1st and 2nd class houses to 1,000 of total classed
Bhadran	719
Pij	693
Sinore	593
Visnagar	582
Variav	568
Bahadarpur	563
Sankheda	561
Bilimora	552
Vaso	543
Dabhoi	543
Padra	490

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the other hand Amreli has the melancholy distinction of being almost at the bottom. The margin distributes the 46 towns according to the proportion of better class houses. The majority of them belong to the middle class where the proportion of first and second class houses is between 200 to 450 per mille. The condition in 11 towns is even worse than that of the State as a whole ; and of the five towns that bring up the rear, there are, besides Amreli (57), Ladol (22) and Unava (7).

Proportion of 1st and 2nd class houses to 1,000 houses classed	Number of Towns
450 and over ..	13
200—450 ..	22
100—200 ..	6
Upto 100 ..	5

94. Religion in Towns—Subsidiary Table II shows the extent to which the adherents of different religions are attracted to towns. The proportion of the general population that lives in towns is 21 per cent. The religions that exceed this mean percentage of town-dwellers from amongst their number are Parsi, Musalman, Jain and Christian. Of the Parsis 79 per cent. are town-dwellers. 43 per cent. of the total followers of Islam are found in towns. 41 per cent. of Jains reside in towns. The Musalmans of this State are more urban than their brethren in other provinces and States in India (with the exception of Ajmer Merwara). One reason of this circumstance is that 31 per cent. of Musalmans of the State are supported by trade, transport and industry (which are mostly limited to urban areas) against 19 per cent. of the general population who are so supported. Among Hindus, it used to be said that town-dwellers were recruited from the higher castes than from the lower. But this is no longer true. The rise of industries in towns is attracting in increasing numbers people from the lower castes who had hitherto been content to earn their pittance from labour on the land. The urban Christian population amounts to 271 per mille of the total number of Christians in the State. Taking only Indian Christians, the proportion is reduced to 255. The majority of the Christian converts is found in Central Gujarat. In Baroda *Prant* alone there are 5,660 Christians or 76 per cent. of the total Christian strength. If we take the town-dwellers amongst them, the proportion is reduced to only 114 in the Baroda *Prant* showing that the typical local convert is a villager in this State. As to the other religions, the majority of Hindu Aryas and Sikhs and almost all Brahmos are residents of towns.

As a result of these varying percentages, the religious composition in towns is different from the religious distribution of the general population of the State. The margin gives the comparative figures. The proportionate strength of Jains and Musalmans, in towns is double their ratios to the general population ; that of Parsis is more than treble. The Animists form only 1 per cent. of the urban population but their proportional strength in the general population is seven times as much.

Religion	Proportion per mille	
	in the State	in the Towns
Hindu Brahmanic ..	819	773
Musalman ..	76	157
Animist ..	77	11
Jain	20	40
Parsi	4	13
Christian ..	4	5
Others ..	....	1

95. Rural Population—The total population enumerated outside the urban areas in the census of 1921 was 1,685,699, or 79 per cent. of the total population. The total number of villages wherein this rural population was found was 2,902. " Village " has been defined in this census as well as in the previous census to include all hamlets within the boundary of the Revenue village lands. In 1921, this definition was strictly applied. All hamlets whether they formed part of villages and towns were counted along with the parent village or town. It was deemed advisable that the Census Register of inhabited villages should correspond as closely as possible with the *Mulki Dehzada* (Revenue Village Register). The census village was therefore made identical with the Revenue Mauza. In 1911, although the definition was the same as now, it was interpreted rather loosely. No less than 179 hamlets were included within the total of inhabited villages in 1911. For this reason the number of separate villages was shewn in 1911 to be 3,054. The correct number should have been only 2,875. Six of this number have become uninhabited since 1911. Seven have been now raised to towns. On the other hand, one town of 1911 has been put back as a village in 1921. Ten new villages have been formed in the decade ; four hamlets

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which formed part of towns and villages in 1911 have been constituted into separate villages since that date ; and twenty-five uninhabited villages became inhabited in 1921. The total number of villages is now therefore 2,902, as already stated. These villages are distributed in the margin by natural divisions. The table also gives comparative figures of 1911. In Central Gujarat, the net increase in villages has been by only one. In Kathiawad, the number is the same. In South Gujarat the difference is the largest. The variations in this division however are almost entirely confined to the forested areas of Mangrol and Songadh. Two old villages of the Rasti tract have now been promoted to towns. But the other gains or losses occur in the two talukas mentioned above. Four inhabited villages have become deserted, but on the other hand four new villages have come into existence and 22 uninhabited places have become inhabited. But as the net variation in these areas has been a decrease in the population, the addition of these inhabited villages does not mean anything. The primitive tribes of these wild tracts have little fondness for settled village-life. There is therefore in the Rani Mahals scarcely anything corresponding to a village site ; superstition, as much as nomadic instinct, has helped to keep these tribes scattered in their separate fields ; the dwellings of these people consist of temporary "hutments" which are removable at will ; from year to year these habitations continue changing. What is an inhabited place to-day may be deserted to-morrow. The increase in the number of inhabited villages in this tract must have been therefore at the expense of the population of the old villages.

Division	Number of villages in	
	1921	1911
Central Gujarat	820	819
North Gujarat ..	1,035	1,029
South Gujarat ..	764	744
Kathiawad ..	283	283
Total State ..	2,902	2,875

96. Villages Classified according to Size—Imperial Table III gives the number and population of villages and towns classified according to size. Separating the number of towns from the list we get the total of 2,902 villages classed according to size as in the marginal table which also gives the comparative figures of 1911 (adjusted according to the interpretation of the definition of a village in 1921). Of the 179 hamlets which were wrongly treated as separate villages in 1911, 170 were of small size and 9 were in the middle class. These have been deducted in this table from their respective classes in 1911. The table contains also the proportional figures in brackets. The largest number of villages in both years belonged to the small sized villages with a population of less than 500 inhabitants, but the proportion was slightly higher in 1911. The number of such villages and also the proportion of rural population inhabiting them have also decreased. The middle sized villages show an increase on the other hand both absolutely and proportionately since 1911. Not only their number but also the proportion of rural population contained in them have increased since 1911. The number of large sized villages of 1921 do not include the six places of that class which are now treated as towns. On the whole the tendency is for the larger villages to absorb the populations of the smaller ; and the same tendency which has led to a general increase in the town-population has operated also though to a less extent, in the case of these larger rural units.

Villages of	Number in		Per mille of Rural Population	
	1921	1911	1921	1911
Small size (under 500)	1,723 (59)	1,751 (61)	248	266
Average size (500-2,000) ..	1,069 (37)	1,024 (34)	578	567
Large size .. (2,000-5,000) .	111 (4)	100 (5)	174	167

97. Average Population of a Village—The average population of a village is now 581. In North Gujarat, the average rises to 725. In Central Gujarat and South Gujarat the average is lowered by the large Animist populations which they contain. These are not habituated to village-life, and where they live, as in the Chorashi talukas and the Semi-Rani and Rani Mahals, scattered hamlets are numerous. The average population per village in 1911 (calculated on a total of 2,875 villages) was 566.

98. Variation in Coincident Villages in 1911-1921—The constant interchange of class between village and town makes it difficult to estimate the net

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variation in rural population. It will be therefore necessary to find out the coincident villages, in the same way as towns, in the two censuses. The marginal table does this and summarises the main items of the variation. The coincident villages number 2,862, and in these, the population has increased by 72,926, or 4·5 per cent. since 1911. The rate of increase is slightly lower than the general rate of increase. The statement made in para. 86 above that the general position of towns in regard to population is more favourable than the rural areas is further borne out by this table.

Description	1921		1911	
	Population	Number	Population	Number
Total villages in 1911	....	..	**1,627,781**	**2,875**
Villages made towns in 1921	....	..	23,908	7
Tilakwada, a town in 1911, made village in 1921	1,855	1	....	..
Part of village in 1911 made village in 1921	(112)	1	(144)	..
Parts of 1911 towns treated as villages in 1921	2,673	3	....	..
Villages uninhabited in 1921	....	..	179	6
New Villages in 1921	2,581	10	....	..
Uninhabited villages became inhabited in 1921	1,970	25	....	..
Coincident villages in 1911-1921 ..	*1,672,620*	*2,862*	*1,603,694*	*2,862*
Total villages in 1921	**1,685,699**	**2,902**	....	..

99. **Changing Villages**—The pressure of present day conditions is tending to make the character and appearance of villages more and more uniform. The walled villages of Kathiawad which in olden days were evidence of the general insecurity of the times are giving place to the average type of Gujarat village with its central inhabited nucleus sheltered usually by the side of a large pond and surrounded by cultivated fields. The sharp demarcation of classes still continues to the extent of keeping off the Bhangis and other untouchables to the fringe of the village site. The Vagharis and Ravalias and other similar classes of menial labour likewise dwell apart. But the other classes seem to begin to mingle. The old division of castes into mutually exclusive *Mohollas* is giving place (except in respect of the Musalmans) to streets with a miscellaneous population. At least in the larger villages, these changes are very apparent. The changes in standards of taste and living, which are evidenced in the towns by the presence of "Europe shops," westernised furniture, houses of a more modern type, and a more variegated occupational distribution are gradually finding their way into the larger villages. In many large villages of a population between 1,000 to 3,000 for instance, the line of demarcation between town and country is becoming gradually fainter. Almost every substantial village has now a *chora* or the village resthouse, where the village panchayat meets. The ubiquitous school-house, and the library—of which more anon—offer further meeting places where the village leaders can meet.

100. **Present day Tendencies in the Rural Economy**—In the olden days the chances of meeting were not so frequent. Not that there was no communal fellowship at all ; there was indeed a good deal of interchange of feeling ; but it was curious that in the old type of rural economy, a very close bond of fellow-feeling and even sympathy was combined paradoxically enough with a jealously guarded individualism, under which the different communities within the village lived on the basis of the strictest mutual non-interference. Occasionally religious or social festivals, or again, the urgency of danger brought them together, but ordinarily their lives were lived apart from one another. Now the points of contact are oftener. Almost every large village in the State may be said to be, if not a railway station, at least within easy reach of one. The present day villager if not wiser than his father, is at least a more travelled man, and better posted in the world's affairs. The spread of education also has helped to bring the communities together. The Brahman, Vania and the more prosperous sections of agriculturists seem to coalesce more and more so far as living in the same neighbourhood is concerned. The old organisation of credit which brought the agriculturist and non-agriculturist together indeed continues in much the same way. But there is now a good deal of coalescing of functions : the money-lender for instance has become a cultivator to an increasing degree, while the cultivator himself is not slow to become a *Saukar* in his turn. The two classes seem now to meet therefore on a footing of greater economic and intellectual parity. The old *mahajan* organisation, which had been powerfully operative in the large villages and

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towns in the olden days, used to be dominated by the capitalist and trading elements which had adroitly managed to keep out the highest and the lowest castes from representation : this system of village organisation is now being considerably weakened by the impact of two kinds of forces. The rise of other classes—agriculturist in character—in the first place has weakened the power of the Vania "oligarchy." In the second place the intrusion of the State machinery in the shape of a net work of village revenue establishments, village-police, village-panchayats, the village educational system, and the like has rendered impotent in many respects the functions of the olden organisation. As a consequence, the rural economy is receiving a new orientation wherein the communal divisions of village society are giving place to a new differentiation based on wealth and economic standards. The old agricultural aristocracy also—still preserved in *matadari* villages—is being rent in twain not only by the factions of the different *patis* themselves but also by the influx of new men even, from other classes, with little weight but greater "influence."

101. **Gradual Breaking-up of the Unity of Village-site**—One of the most remarkable changes of late years is the breaking-up of the unity of the village-site. In addition to the 2,950 towns and villages, there are altogether 574* recognisable hamlets in the State ; that is to say one village or town out of five has a *para* or hamlet attached to it. These hamlets are concentrated mostly in the areas mentioned in the margin. Chorashi, as it appears, has the largest number of these hamlets. The village of Mankni (in Sankheda taluka) for instance has 12 hamlets attached to it. The formation of hamlets is due mainly to two causes. Where the village-site is not very centrally situated, it may be necessary for some groups of cultivators whose lands are remote to remove from the village-site and set up a hamlet of their own, self-contained as far as possible to meet their requirements, in the immediate vicinity of their fields. Secondly, the immigration of new cultivators from outside—either from within the State and beyond it—leads to the formation of these *paras*. The setting free of large grass-lands in Chorashi to auction led to the influx of settlers from Kahnam and elsewhere and the establishment of new hamlets. Since 1911, it has been estimated that 145 new *paras* have been formed. Of these 98 are in Baroda *Prant* (83 being in Chorashi alone) and 41 are in Kadi *Prant* (28 being in East and West Kadi). It is in these parts that the immigration of the type noted above has been also most in evidence. It must be added however that in the whole of Kathiawad, there are only 10 such hamlets. The village-site therefore is the most consolidated in that division due no doubt to the comparative insecurity of that region.

Natural area	Number of hamlets attached to villages	Average population per village	Average population per residential area
Chorashi	247	448	244
Trans Sabarmati ..	77	463	306
East Kadi	59	894	796
West Kadi	57	623	534
Kahnam	37	534	455
Vakal	30	715	617

This break-up of the village site is also due in a manner to deliberate State policy. An order of His Highness, dated the 6th February 1915, recognised the difficulties which the people felt about looking after their fields, where the village site was remote from their houses. It permitted such people to build houses and even set up a settlement of the village type with the full complement of a self-contained village-service of *Sutars* (carpenters), *luhars* (blacksmiths), *mochis* (cobblers), watchmen, scavengers, etc. Such settlements if they exceeded 50 houses were to be treated on the footing of a village. These *paras* were to be established on some standard plans with roads and open spaces and other conveniences. Exactly how many of the 145 new *paras* in the decade are the result of this policy of the State it is not possible to determine. But at any rate, the close correspondence which existed previously in the Gujarat village between village-site and residential area is certainly passing away at least in the Chorashi tract.

This want of correspondence is illustrated in the marginal table given above. Chorashi is the most striking instance. Taking only formal villages, the average population per village in that tract is not much below the average for the

* This figure is exclusive of Railway Stations and settlements.

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State. But taking the total residential areas into account, the average falls to 244 or exactly half. With Trans-Sabarmati and the other areas mentioned in the table such is the case to a less extent. The greatest correspondence is found curiously enough in Charotar, where there is a very organised village-settlement and also in Rani Mahals where the village site exists almost in name. In Kathiawad also, there are few *paras* and the number of villages corresponding closely to that of residential areas.

102. Houses in Urban and Rural Areas—The change in type of houses is not the least noticeable feature of present day life in the larger villages and towns. Para. 62 of the last Census Report contained an excellent account of the various types of houses. The changes that are being gradually introduced were also briefly noticed in that para, to which the reader may be referred. The tendency is now to build more open houses with more windows and doors lighting on the roads. The windows are no longer little chinks high above the road level as they used to be in the olden days. Thus the new style of houses points to a greater sense of security and comfort. The thatched roof is giving place to tiles and even among Kolis, Rabaris and such like classes, tiled or even brick built structures are not uncommon. It has been observed that in the drier belts the houses have flat roofs; in Kathiawad where stone is plentiful, the structures have often *pucca* stone-built walls. It is interesting also to note in this connection that the character of the roof varies with the rainfall. In tracts where the rainfall is heavy, the huts have ridged roofs with gables. The last Census Report for Bombay pointed out that "the border line of flat roofs coincided pretty fairly with the line of 25 inch-rainfall." The homes of the Animistic tribes which used to be a collection of detached huts, not unlike a Kaffir *Kraal*, are also beginning to show the traces of modern influence. Among many sections of these tribes notably those who have had a little schooling and have come under the influence of towns like Dublas and Chodhras, houses of the more usual type are met with more than one room and larger entrances. Generally the rise in worldly circumstances is indicated by the separation of cattle from the living rooms. In the poorest class of house, the cattle are accommodated even in the same room as the family. Even where circumstances of life are easier, as in the case of richer Bharwads and Rabaris, social habits have so ruled that living rooms should be close to the stalls for their cattle and sheep.

103. Number of Inhabited Houses in Urban and Rural Areas—The number of inhabited houses in towns in 1921 shows an increase of only 439 or 0·4 per cent. over the figures of houses in the same areas in 1911. The increase in population is however 13,642 or 3·3 per cent. In villages, the number of inhabited houses in 1921 show an increase of 6,109 or 1·5 per cent. over the figure in identical areas in 1911. The rural population has increased within the same period by 4·9 per cent. Generally as pointed out in para. 65 the increase in houses has not been so rapid as the increase in the population. It now appears that in towns more than in the country, new houses have not been built fast enough to house the increasing population. Mr. Govindbhai in 1911 concluded from his figures that both in town and country, the houses pretty nearly kept pace with the population.

Number of persons per inhabited house			
In Towns		In Country	
1921	1911	1921	1911
3·7	3·6	4·3	4·1

104. Areality and Proximity of Towns and Villages—Calculations in regard to the areality and proximity of towns are an interesting index of urbanisation. The margin sets out the comparative figures since 1911. The figures for 1911 (as given in the last Census Report) have been revised according to corrected area. From this point of view, Charotar with its 8 towns gives the smallest areality, *viz.*, 33·4 square miles, per town. The Rasti Tract with its 6 towns comes next with 69·6 square miles. Generally the order according to areality should correspond to the order according to urban ratios (*vide* para. 82). But of course the test of the proportion of urban popula-

Division	Areality of towns in square miles (calculated on corrected area)	
	1921	1911
State	169·3	193·5
Central Gujarat ..	101·2	120·1
South Gujarat ..	225·9	301·1
North Gujarat ..	203·1	219·6
Kahiawad	225·3	225·3

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tion to the total is far more correct. If all towns were more or less of the same size, then areality could have been utilised as a very good criterion of urbanisation. The areality of villages, taking only revenue villages and not residential areas, is 2·80 square miles per village in the State. In South Gujarat and Kathiawad where villages fairly correspond to residential areas, the areality is 2·3 and 4·8 respectively. Taking the total number of residential areas, which is 3,522, the areality is reduced to 2·3 square miles. The situation in Navsari *Prant* therefore fairly represents the average for the State In 1911, taking a total of 2,875 villages, the areality was 2·83. In the Bombay Presidency the areality of towns is 547 square miles. In British Gujarat, the areality is 281·8, which is higher than the State. But this method of comparison is misleading as pointed out above ; and as a matter of fact British Gujarat is more urbanised than this State.

The mean distance of towns, on the assumption of each to be a point, in the Baroda State is 14 miles* ; that is to say, if all the parts of the State were compact, and the towns were equidistant from one another, a man will have to walk 14 miles on an average from one town to another. In Central Gujarat, the distance is the least, 10·8 miles. In South Gujarat and Kathiawad, the proximity of towns is in each case rather more than 16 miles. In North Gujarat it is 15·3 miles. The mean distance between villages (not residential areas) is similarly found to be 1·8 miles in the State. In South Gujarat and Kathiawad, the proximity of villages is 1·65 and 2·4 miles respectively. In Central and North Gujarat, the corresponding figures are 1·6 and 1·8 miles respectively.

PART II

The City of Baroda

105. Population of the City—The population of the City is 94,712. Included in this total are 2,934 persons residing in the Cantonment with an area of one square mile, which lies to the north-west of the City from which it is separated by the Vishwamitri. The Camp population consists of an Indian infantry regiment with its complement of British and Indian officers, the Residency, a few private bungalows belonging to Indian gentlemen and two or three streets of an Indian bazaar of the usual type attached to Indian Cantonments. The number of inhabited houses in the Camp is 713, showing a decrease of 78 since 1911. The population has also decreased by 544 since that date. Almost the only cause for this decrease is that a short time before the census date, about 600 persons from the regiment left the station. The greater part of the Camp area consists of open spaces; the residential area is therefore crowded and cannot admit of any expansion.

Even if we exclude the Camp from the total population credited to the City we do not get the figures for the City proper, until the Railway areas are excluded. Baroda has always been an important Railway Station. It is at the junction of the Chord and Loop systems of the Bombay, Baroda and Central India Railway. It has a large traffic—both passenger and goods—and the Railway staff is also commensurately large. Since 1911 its importance has been further increased by the establishment towards the north of a Marshalling Yard which has developed with its bungalows and roads into quite a little Railway town. The Marshalling Yard area has now 424 houses where none existed in 1911 with a population of 1,331 (796 males and 535 females). The Baroda Railway Station itself had 51 inhabited " houses " and 146 persons. Platform and Train enumeration accounted for 847 persons. Two other Railway Stations—Goya Gate on the south-east and Vishwamitri on the outskirts of the Palace grounds—swelled the City totals by 59 houses and 195 persons. Altogether the Railway areas contributed in this Census 534 houses and 2,519 persons to the City's totals. The

* Calculated on the same formula as explained in para. 62

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Railway figures for 1911 were only 655 persons. The figures for houses in the Railway areas as well as in the Wards are not separately available for that Census.

The City proper therefore has a population according to the latest census of 89,259 persons inhabiting 25,623 houses. In 1911, the inhabitants of the City proper numbered 95,212. The number of inhabited houses (including the Railway areas) was 27,812 in 1911. The Marshalling Yard, as stated above, did not then exist. If we therefore deduct 110 houses for the three Railway Stations we get a total of 27,702 inhabited houses for the City proper in 1911. Thus there is a decline of 2,079 houses and of 5,953 persons. A slight adjustment has still to be made before the true figures of the decline can be found. In 1911, the City limits contained the village sites of Sawad and Nagarwada. In order to maintain identity with the Revenue Register, these places have been counted as separate villages in this Census. For a true comparison their figures (141 persons) will have to be added to the City totals for 1921. According to the adjusted figures therefore the net decline in the City's population is reduced to 5,812.

106. Area of the City Proper—The area of the City proper in 1911 was given out to be 8 square miles. Since that date, as a result of the revision settlement of the Baroda mahal, the revenue "village" of Baroda was formally constituted out of the survey-numbers of seven villages. Sawad and Nagarwada village sites were formally constituted into separate villages; and an area of 8,984 bighas or 8·25 square miles was marked out for the City. Subsequently it appears by a later notification in 1917, Government decided to extend the formal boundary of the City; and the present area is now stated by the Municipality to be 11·82 square miles. But of this area it appears that 2,555 bighas or 2·4 square miles are cultivable land. The residential area therefore seems to be practically the same as before. The City Improvement Trust which has practically charge of the whole City states that the true City residential area is 8·33* square miles; but they are unable to give the areas separately of the five wards into which the City is divided. The municipal authorities distribute the area in the different wards as per the margin. One of the largest wards is the Babajipura. But it includes the large palace compound (which is about 746 acres or 1·2 square miles) and other open spaces; the part left for the general population is not much larger than Fatehpura. Raopura is also a large district which extends from the City walls to the Race Course beyond the Railway Station. It includes besides the main high road many other wide streets and large open spaces such as the Public Park, the Arboretum, etc. Wadi now extends up to Dantesar on the east and to Tarsali and Majalpur in the south.

Name of Ward	Area in square miles
City Ward ..	0·24
Raopura ..	3·63
Babajipura ..	3·39
Wadi ..	3·37
Fatehpura ..	1·19
Total ..	11·82

107. The Inhabited Area—The true pressure of population in the City cannot be understood until all the open spaces—gardens, palace-grounds, parade-grounds and military camping places, the playing fields of educational institutions and the area covered by lakes and ponds and wide roads—are excluded from the gross area. Here we find that since the last census, the "thickly inhabited area" has remained practically at the same figure, namely 1,066 acres or 1·66 square miles. The road mileage has increased in the ten years from 84 to 98. On the other hand a large tank has been filled up and the whole of it has been laid out as a residential area for bungalows. This new suburb is now called Sayaji Ganj with over 30 bungalows on the old Bhimnath tank site and is the result of the last ten years of city improvements in that direction. The margin gives the area of thickly inhabited portion as well as the gross area by the five wards of the City. From this table it appears that from the point of view of open spaces, the least favoured is the City, and then Fatehpura, Babajipura, Raopura and Wadi.

Ward	Gross area in acres	Thickly inhabited area in acres	Proportion of thickly inhabited to 100 acres of gross area
City ..	154	143	93
Raopura ..	2,323	257	11
Babajipura	2,170	272	13
Wadi ..	2,157	193	9
Fatehpura	762	199	26

* It is unfortunate that the exact area of the City proper cannot be stated with accuracy. The Trust figures may however be accepted as a near approximation.

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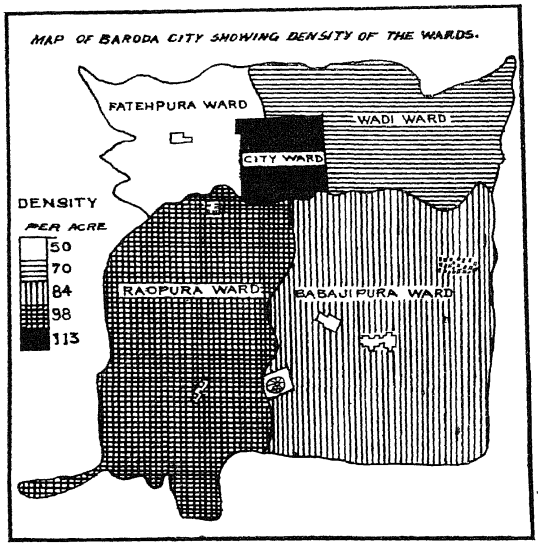
108. Density per Acre—Having regard to the uncertainty that exists about the gross area of the City, it is profitless to make much out of the density per acre of the gross area as given out by the City Municipality. Apart from this uncertainty, the densities calculated on gross area are apt to mislead. Thus on the formal area of Raopura Ward, the density is shewn to be only 10·9, while Fatehpura has 13·1 per acre. But any body who knows the two areas in the inhabited portions will agree that Raopura is far more congested than the other. The accompanying map of the City by wards shows however the density of the wards in the thickly inhabited areas. The most congested portion of the City is the City Ward itself enclosed within the four walls—its gross municipal area being only 154 acres. Within this small limit or about one thirty-fifth of the total residential area,* about one-fifth of the population of the City proper is congregated; with only the thickly inhabited area, however, this disproportion is much reduced; but even then on 14 per cent. of this area, about 19 per cent. of the population are concentrated. Babajipura and Raopura together constitute just about half of the thickly inhabited area. The population of these wards is also about 54 per cent. of the total.



Taking densities into account, 64,982 persons or over 72 per cent. of the total population live under a density of over 80 to the acre. The mean density of the whole City calculated on the gross area is about 12 per acre, which shows a degree of sparseness which even the most luxurious garden city might envy; but in reality it is not so. On the residential area as calculated by the Improvement Trust, the density is 17 per acre. If we exclude only the space covered by the gardens and the lakes and not the road-area and the open spaces within the City, we get a density of 25 per acre. But if we consider the net inhabited area only, the density rises to 84 per acre which as we have seen, corresponds to the state of things in the most congested towns of the State —(*vide* para. 92).

109. Comparison with other Cities—Comparison with townsan d cities in other Indian States and Provinces is only possible on the basis of the gross area, for presumably it is on this total area that the densities for other towns have been calculated. Subsidiary Table IV gives the density per square mile of the whole area as given by the Municipality; it further takes in the whole population. But the Railway areas are not included in the gross area of 11·82 square miles; instead of the formal area, it seems also proper to take 9·33 square miles as the area of the City proper and Cantonment; and in calculating the density for the City, the population of the Railway areas may be excluded.

* Calculating on the area of 8·33 square miles.

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On this basis the density of the City and the Camp is 9,881 to the square mile. In the margin comparative figures are given of certain cities according to the figures received from the Superintendents of Census Operations. Baroda City in this list comes fairly low in density. The two other Gujarat cities of Ahmedabad and Surat have each much higher densities than our Capital. Jaipur has over four times as many people to the square mile as this city. But Hyderabad (Deccan) and Mysore cities seem less congested. The Imperial City of Delhi with its large formal area has less than one-fourth the density of Baroda. In size this city is about one-twelfth of Delhi, less than a fifth of Hyderabad, and more than a third of Bombay; but it is about the same size as Ahmedabad, Bangalore, Mysore, Shrinagar, and three times that of Surat and Jaipur.

Name of City	Area	Density per square mile
Bombay	24	48,996
Ahmedabad	11	24,910
Surat	3	39,484
Karachi	11	19,717
Poona	40	5,370
Madras	28	19,077
Delhi	112	2,178
Hyderabad	51	7,925
Bangalore	10	12,147
Mysore	9·5	8,837
Jaipur	3	40,069
Shrinagar	9	16,000
Baroda with Cantonment	*9·33*	*, 81*

110. Variation in Population—The decline in the population of the City proper has been already estimated (*vide* para. 105) to be by 5,812 or 6·1 per cent. since 1911. The census decrease since 1911 is only 4,089 or 4·3 per cent. In fact the City proper has been decreasing in population since 1891. Taking only census figures into account since 1891, the decrease is 18·4 per cent. Since 1901, when the general population has increased, the City has decreased by 8·8 per cent. As already pointed out the census rate of decrease does not give the full extent of the loss in population which the City has suffered in the decade. This progressive decline since 1891 is one of the most disquieting features of succes sive censuses in the State. The decrease in 1901 amounted to 10·6 in the City (or 10·8 including the Camp). The decrease in that year was due no doubt to the ravages of plague and famine. But it is less than the rate of decrease in the general population of the State, because the City total was swollen by refugees from famine areas. The famine poor houses contained no less than 1,100 such derelicts. In 1911, the effect of plague on the survival rate and of successive bad harvests and continued industrial depression was seen in the decrease of 4·7 per cent. in the population. The report of 1911 stated that "in 1901 uncooked *Khichdi* was freely distributed to Dakshani Brahmans and cooked one to Musalmans as a charity from the State," but that under more enlightened regulations brought about since then, charity was restricted only to the really destitute. Thus these idlers must have drifted away from the City finding that there was no further scope for their indolence. Mr. Govindbhai also refers to the operation of certain administrative measures such as the reduction of the State Military, the decrease in the Jail population and the abolition of the famine poor houses as additional contributory causes to the decrease in the City population in 1911. Such administrative measures can only account for the decrease if in other respects the population is assumed to be stationary. We have therefore to consider the two aspects from which solely variation in population can be effected—namely migration and vital occurrences.

Census Year	Population of City proper	Variation per cent. from previous Census	Variation with 1891 as 100
1891 ..	112,471	....	100
1901 ..	100,628	—10·6	89·4
1911 ..	95,867	—4·7	85·2
1921 ..	91,778	—4·3	81·6

111. Migration in the City—Let us take migration. We are however hampered in our discussion by the lack of figures of emigration from the city. The balance of migration cannot therefore be indicated. But at any rate the figures of immigration since 1891 can be studied with advantage. The margin gives the figures of persons enumerated in the City whose birth-places are outside the limits of the State since 1891. There was a

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Census Year	Immigrants to City from outside State
1891 ..	31,439
1901 ..	24,430
1911 ..	26,187
1921 ..	24,441

large drop in 1901, due no doubt to the *sequelæ* of the famine, which kept the immigrants away from the City. In 1911, the conditions more or less approached the normal. In 1921 again there is a decrease not only in absolute figures but also proportionately to the total population of the City. The proportion of those residents of the City who were born outside the State was 263 per mille in 1911 and 258 in 1921. Calculating by the Longstaff Method, during the decade 1891-1901, 4,165 immigrants are estimated to have come. In the next decade, they came in larger numbers apparently and the total figures at 11,880; but in the latest decade, the number of arrivals is reduced to 8,380. As the Railway Marshalling Yard has been formed since 1911, and as 70 per cent. of its population is foreign born, we have to reduce the above figure by about a thousand to get at the total number who came to the City proper within the decade. The real immigrants to the City have therefore decreased largely unlike the state of things in the State generally. The balance was therefore not very favourable to the City; if we assume however that the balance was as much as in the State generally, irrespective of any natural variation, the population of the City proper should have increased from 95,212 to 96,259 at the migration rate of increase of 1·1 per cent. (*vide* para. 58). The present population on the same area as in 1911 is 89,400. Thus if the balance of migration is as calculated for the whole State, the decrease through natural causes would amount to 6,859 or nearly 7,000.

112. The Total of Births and Deaths in the Decade—Let us see what the record of vital occurrences tells us. The number of registered births in the City during the last ten years was 20,443. The registered deaths during the same period amounted to 36,938 of which 7,180 deaths occurred amongst infants, 5,837 among children aged 1-5 and 23,780 among persons aged 5 years and over. The register of births and deaths is more accurately done in this city than elsewhere in the State, because the compulsory law is here enforced fairly rigorously. But the figures are still far from accurate. The average annual number of births registered is 2,044, while the average annual number of primary vaccinations amongst infants under one year is 2,342. Obviously, therefore, the registration is defective. Apart from this, it must be remembered that most city-females, if their homes are outside, go to their native places on the occasion of their first confinement. In this way the births of many children belonging to normally resident families in the City are recorded elsewhere. There are roughly 12,000 women in the State whose birth-places are outside the City. Of these 40 per cent. may be taken to be married. If each of them go at least once during the decade for their confinement there will be about 4,800 births not registered in the City at all. Under these circumstances we have to fall back on one of the various expedients for estimating the number of births and deaths. In Appendix II it has been calculated that 22,093 births to 10,000 women of the child-bearing ages 15-45 is the normal rate of fertility for ten years in the State. Conditions of the City are however peculiar. The sex-ratio gives a preponderance to the male in the population of the City as compared to the State as a whole. In the general population there are 932 women to a thousand men. In the City the proportion is only 837. The proportion of children under 10 years of age (who are presumably the survivors amongst the births in the decade) to 100 married females aged 15-40 is 132 in Baroda City and 167 in the State as a whole. This is a sure evidence of lowness of births which is seen also in the censuses of 1911 and 1901—*vide* Subsidiary Table V of Chapter V. The mortality rate for the age period 0-10 is about the same in the City as in the State. The margin gives the ratios per each census year and the mean of the whole period. Therefore, the birth rate of the City for the decade 1911-1921 may be assumed to be about $\frac{123}{149}$ of the mean rate obtaining in the State. The mean number of child-bearing females during the decade was 17,294. The total number of

Year	Proportion of children under 10 to married females aged 15-40 in	
	The State	The City
1901	135	117
1911	145	119
1921	167	132
Mean ratio 1901—1921	149	123

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births therefore that must have occurred in City during the ten years is 31,540. The registered deaths are 36,797. The standard of accuracy in regard to death registration is much greater than in respect of births generally as pointed out already; especially is this true in regard to mortuary returns in the City. Following Mr. Hardy's method, the population of 1921 aged 10 years and over* in the City (including Railway areas, but excluding the Camp) is deducted from the population of 1911, on the same area but of all ages. The remainder, 24,534, would represent approximately the deaths during the decennium, aged 5 years and upwards. Now the total registered deaths among persons aged 5 years and upwards is 23,780. When we consider that the figure of 24,534 includes also persons in the Railway areas which are not brought under registration, we can see that the registration of deaths is very fairly accurate on the whole. Thus taking a total of 37,000 deaths and 31,540 births a net deficit of about 5,500 is accounted for.

Population of 1911		95,867
Population of 1921 ..	91,778	
Deduct ..	20,445 aged 0-10	
Deduct remainder		71,333
Difference		24,534
=deaths aged 5 years and upwards.		

113. Migration to Suburbs due to Street Improvements—We see therefore that natural causes have mainly contributed to the total decrease. A further contributory cause has been the displacing of hovels by street-widening operations. The total number of houses in Baroda City proper (excluding the Camp and Railway areas) amounted to 41,520 in 1911. In 1921, the numbers declined to 40,823 showing a decrease of 697 houses. In the margin the houses are shewn by wards. The total of houses shows an increase in City and Raopura Wards only. Wadi shows the most decrease. The number of occupied houses in the City (including Camp) has decreased from 28,603 to 26,870 or by 1,733. Taking only the city proper, we have estimated in para. 105 the decline in occupied houses to be 2,079. In the city there are 3·5 persons per occupied house; so at that rate, the decline in population should be about 7,300. But the total decrease has been only 5,812, of whom nearly 4,000 are accounted for by natural decrease. The widening of the Leheripura and Raopura main roads was mentioned as one of the causes of the decrease in the number of occupied houses in 1911. Since then, the Improvement Trust has been regularly constituted and scheme after scheme of street widening has been undertaken. Almost all the congested Pols (or quarters) of the city have been treated to what Mr. Patrick Geddes calls "conservative surgery." Dilapidated houses have been cleared, narrow and filthy lanes have been widened and repaired; obstructing houses have been demolished; breathing spaces have been opened out in the heart of slums and a net-work of roads has been pushed out all over the City. The increase in road mileage has been already mentioned. The number of houses demolished cannot be stated accurately. But it is certainly considerable. It is certainly true that better types of residential houses are in evidence all over the city and particularly in the superior residential quarters. It is the cheaper hovels that have disappeared. In the urgency of street-improvements, the question of providing for the displaced population could not have been given prominence at first. But later when the number of displaced families became larger, every scheme of improvement was accompanied by provisions for housing the dislodged population. But in the meantime where did the people go?

Name of Ward	Number of houses numbered in 1921	Variation since 1911
Total City ..	40,823	—697
City Ward ..	8,580	+493
Wadi ,, ..	6,057	—664
Fatehpura ,, ..	4,927	—332
Raopura ,, ..	11,865	+362
Babajipura ,, ..	9,394	—556

The answer to this question will be found perhaps in the variation in the population of the villages that lie within a two-mile radius of the city.

* Corrected age-returns—*vide* Chapter V.

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Figures for Baroda Suburbs

Name of Village	Population in 1921	Variation since 1911
Akota	582	+17
Bapod	338	+159
Chhani	1,654	—30
Dantesar ..	1,145	+445
Dena	435	+25
Dumad	1,175	+122
Harni	804	—8
Kapurai ..	459	+32
Karodia ..	504	+23
Gorva	2,531	+286
Gotri	1,060	—12
Jetalpur ..	314	—326
Sayajipura ..	228	+137
Sama	501	—18
Subhanpura ..	281	+77
Wadi Wadi ..	262	+37
Total Suburbs of Baroda. ..	12,273	+966

The marginally noted 16 villages show an increase of 966 or 8·5 per cent. on their population in 1911. The decreases occur only in 5 out of these 16 villages. The other villages show substantial increases for their population particularly Dantesar. The Baroda Mahal to which they belong has only an increase of 512 or hardly one per cent. Without these villages the taluka would have shewn a decrease of 454. The other villages in the taluka, even the strong ones, generally show a decrease such as Bhaili, Varnama, Itola and other places. The inference is irresistible that the whole of this increase is due to immigrants from the city. * The rest of the displaced population must be assumed in the absence of any definite data to have added to the over-crowding in the city or otherwise to have emigrated from the city.

114. Reduction in the Army Effectives—The two main causes of the decrease in population have been mentioned. One minor cause remains to be stated. The total actual strength of the effectives of the State army by the disbanding of about 500 mostly recruited from the up-country or the Deccan. If half of these are married men with families, about a thousand persons may be deemed to have left the city.

115. Population not so far Benefited through Industry—The above discussion has proceeded on the assumption that the City has gained at the same ratio as the general population from migration. But probably the truth is that if there is no actual loss, the figures of immigrants and emigrants are about equal. The City has had little or no industrial development during these years. The number of persons engaged in industry, transport and trade is 40·8 per cent. of total workers. In 1911 the proportion was 38·5. Taking only industry, the proportion of industrial workers in the city has decreased from 24·2 per cent. to 23·4. The proportion of total workers to total population has also fallen from 45·7 per cent. to 43·5 per cent. This is also indicated by the Subsidiary Table V of Chapter V, wherein the proportion of children under 10 to 100 able-bodied persons aged 15-40 is seen to have increased from 44 in 1911 to 48 in 1921. In fact this proportion has steadily risen from 1901 showing that the City is losing, if anything in its able-bodied element who are either emigrating or being killed off by high mortality.

The lack of industrial enterprise is shewn in the character of the occupations of those immigrants who have come from Ahmedabad, Surat, Kaira, Broach, Kathiawad and Rewa Kantha (*vide* State Table XXV discussed in the next paragraph). Out of 10,853 such immigrants, 4,947 are workers and of these only 55 are workers in the local mills. Thus this City is quite adversely affected by the competition of Surat, Broach and Ahmedabad. The mill industry of this city has remained stationary so far as population is concerned ; although a few smaller industries have been started recently they have not induced as yet any deflection of labour from the outside. Since the Census however, the State has resolved upon having its own Railway Workshops and running its own Railways. Near the Goya Gate, extensive building operations have been undertaken. Work was already in progress when the census was taken, as is seen in the large increase of Dantesar village in the neighbourhood of which the buildings were begun. Since the date of the census however a large influx of labour has come on this work, and I am informed that about 1,500 persons are now settled in the vicinity of the Goya Gate Station and the Tarsali Military lines ; when the workshops are in full working order, it is expected a large Railway settlement will eventuate in the near future. As to industrial expansion, among the pro-

* In the above enumeration of the City's suburbs the villages of Sawad and Nagarwada have not been counted, for the figures of these villages have been reckoned in the calculation of the net variation.

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jected enterprises mentioned in para. 55, a woollen mill in the city is being established. But generally speaking the city has not been much of a beneficiary so far in industrial development.

116. Immigrants from Selected Areas by Age and Occupation—It is of great economic interest to know to what extent the neighbouring parts of British Gujarat have contributed to the occupational distribution in the City. The State Table XXV has therefore been compiled. The total number of immigrants to the city from outside the State is 24,441. Of these, rather less than half or 10,853 come from neighbouring Districts and States of Gujarat. The marginal statement gives the ratios for immigrants from the different parts. Kaira of course supplies the largest number; but Ahmedabad which is remoter contributes more than Broach or Surat which are nearer. Of these 10,853 immigrants, 4,947 are workers. State service absorbs 1,103 workers or 22·3 per cent. 64 of these immigrant State servants are women. Artisans of all kinds are represented by 888 workers (93 females) or 17·9 per cent. There are 576 shopkeepers (93 females), 138 beggars and religious mendicants, 55 mill hands (18 females) and 1,636 "others." The few mill hands amongst these immigrants are mostly from Kathiawad. State service seems to be the chief attraction; and in this respect Kaira contributes the largest number among workers—561 workers or 51 per cent. of these immigrant State servants. Presumably most of these State servants are from the Patidar community of British Charotar. 175 State servants come also from other Indian States in Kathiawad, 125 from Ahmedabad, 113 from Surat and only 78 from Broach. Female workers number 867. The proportion of immigrants supported by State service in the City is 26·4 per cent.

Name of Gujarat Districts	Percentage of immigrants to total
Ahmedabad ..	14·1
Kaira ..	39·2
Surat ..	10
Broach ..	10·2
Kathiawad ..	21·5
Rewakantha ..	5

The division by age-periods shows us that the immigrants to the city from these selected areas are mostly of the age of 15 and upwards. Their number is 8,415 (4,732 males, 3,683 females) or 77·5 per cent. of the total. The number of dependent males is 1,992; the males under 15 years of age are 1,340. Presumably workers of both sexes are not found among the children under 15, but the table does not show this. Assuming this to be true, the male workers are 86·2 per cent. of adult male immigrants, while the female workers are only 23·5 per cent. of adult female immigrants.

117. Distribution of Immigrants—Coming now to the total of all immigrants to the City from outside its limits, we append a marginal statement giving the necessary ratios with comparative figures for 1911. The districts of the State contribute more largely now to the City immigrants than they did 10 years ago. Of the divisions of the State, besides the Baroda *Prant*, Kadi *Prant* contributes the largest number, and in proportion to their population, Amreli and Okhamandal *Prants* together have a larger share of the immigrants than Navsari *Prant*. The proportion of representatives from the contiguous territory in British Gujarat and other Indian States in Gujarat and Kathiawad is also much larger. The "outsiders" from remoter parts of India are far fewer now than before. The number of immigrants from Europe and America has also decreased.

Immigrants from	1921	1911
District of enumeration	16·1	15
Other Districts of State	10·8	9
Contiguous parts of India.	44·4	37
Other parts of India ..	28·5	38·6
Outside India	0·2	0·4

The proportion of foreign-born to the total City population is 353 per mille in this census; in 1911, the corresponding proportion was 348. The proportion of immigrants has therefore slightly increased, because of the decline in the total population; but the absolute figures of immigrants show a decrease by 1,029 or about 3 per cent.

Taking the immigrants by wards and divisions of the city, the Railway areas show the largest element of the foreign-born—between 60 to 70 per cent. The Camp comes next with 56 per cent. Of the wards of the City proper, Raopura has

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the largest proportion of immigrants—the official class and the European residents being found in this area. Babajipura shows 36 per cent. of its population as immigrants—a large number of them being from the Deccan. The Wadi and City Wards are the most native of the quarters of the city.

118. Sex Ratios and Variation by Wards—It is interesting to find that where the sex ratio is the most uniform, there the decline of population has been the greatest. The exception is the Camp area, which, owing to the accident of a third of its regiment leaving the station just before the census, has lost in population. The margin gives the necessary figures. The largest decrease has occurred in the City and Wadi Wards, where the women and men approach equality in numbers; and here also it may be added that the immigrant element is the least in evidence.

Name of City Ward	Proportion of females to 1,000 males	Variation per cent. since 1911
Wadi	911	—12·1
City	932	—11·7
Fatehpura	872	—5·4
Babajipura	825	—3·4
Raopura	810	—1·3
Camp..	616	—15·6

One other interesting point may be emphasised in connection with the variation by wards. The Wadi is the oldest part of the City which extends up to the region of the lakes on the north-east and to the Goya Gate station and beyond in the south where the beginnings of modern industry have already become manifest. The Wadi used to be the place of residence of the old aristocracy; but with the withdrawal of population into the Fort, as a result of the wars and dangers of the eighteenth century, the decline of this fine old quarter with its fine temples and monuments may be said to have commenced. Since then the movement of the population has been further westward and towards the north and north-west as well as south-west. The four walls that enclose the city district have made the houses there very congested. The reeking *pols* of the olden days belonging to distinct classes and castes of people used to form *culs de sac*, the entrances to which were closed by heavy doors. These doors have now been broken down. The alleys are being widened wherever possible and numerous unhealthy dwellings have been swept away. Out of a total of 14,600 houses in these two wards only 8,889 are now inhabited. Standards of living have also increased and the wealthier classes have sought more open spaces for their houses. The rise of Sayaji Ganj (in Raopura Ward) as a suburb to cater for this class is due to this desire. The figures show, therefore, that as we go due west, the decline in population is less and less. The Wadi, City, Fatehpura, Babajipura and Raopura all show decreasing ratios of decline from east to west.

119. Tenement Census—Scope of the Enquiry—We now conclude this chapter by presenting the results of the special enquiry into the kind and distribution of tenements that was undertaken in the City. At the desire of the Government of India in the Education Department this State undertook to collect special information for the city of Baroda alone as it was the only place for which the information was likely to be useful. Local conditions differ so greatly in India that it was wisely decided to leave to the local Superintendents of Census Operations to work out their own methods with reference to the kind of statistics that were of local interest. Here in this State, a special house-list was devised whereby the following items of information could be collected :—

(*a*) the nature of the structure, *i.e.*, whether pucca or kutcha (made of brick or of mud, etc.);
(*b*) the kind of structure from the point of view of its use, whether as a private residence, shop, godown, etc.;
(*c*) the number of floors in the structure;
(*d*) whether the building is the property of those residing in it, or is rented to them;
(*e*) the number of families occupying the structure as well as the number of rooms occupied by each;
(*f*) how far there is evidence of overcrowding from the number of occupants per building and
(*g*) the classification of structures according to the number of rooms in each.

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The above information may be found in the State Tables XIX-XXIII ; (*a*) and (*b*) will be found in State Table XIX and corresponding Subsidiary Table V ; (*c*) will be got from State Table XX and Subsidiary Table VI ; (*d*) is indicated in the final columns of State Table XXI and Subsidiary Table VII ; (*e*) is found in the first part of these tables as also in the second half of State Table XXIII and Subsidiary Table IX ; (*f*) is shewn in State Table XXII and Subsidiary Table VIII ; and (*g*) is contained in the first half of State Table XXIII and of Subsidiary Table IX. The State Tables XIX-XXII contain the details per each circle. State Table XXIII gives the details per each Ward. The Subsidiary Tables (V–VIII) corresponding to the State Tables XIX-XXII summarise the figures by Wards ; Subsidiary Table IX (which corresponds to State Table XXIII) gives the figures for the city as a whole.

120. Subsidiary Table V—Classification of Structures—At the outset of the enquiry one was met with the difficulty of how to define " building." The question was whether to choose a structural unit, or some unit corresponding to some municipal assessment. The structural unit is well-understood locally and the distinction between a *makan* and a *ghar* is well within the comprehension of the people. On the other hand, the municipal assessment basis might have raised suspicions about the object of the enquiry. It was deemed advisable therefore to stick to the structural definition. At the same time, along with the makan-numbers the census numbers on " houses " were also shewn in the same house-list. The enquiry was conducted from October to December in the year previous to the Census, so that it was not in any way synchronous. Finally it must be added that the enquiry was limited only to the City proper and excluded the Railway stations and settlements and the Cantonment area.

Altogether there were 22,787 separate buildings or structures enumerated in this period. The total of houses according to the standard definition numbered about that time was 40,823. Thus there were 55·8 structures to every 100 " houses." Of these the largest number or 68·7 per cent. consisted of private dwelling houses, bungalows, shops and residences combined and other such residential tenements in the occupation of the inhabitants. There were besides 1,124 shops, 883 Government buildings, 401 places of religious worship, 258 godowns, 45 educational buildings, 41 factory buildings, 16 dispensaries, 5 theatres and 4,355 other kinds (including vacant private buildings). The largest proportion of shops (or 61 per cent.) are in the City and Raopura Wards. Government buildings are mostly found in the Raopura and Babajipura Wards, mostly in the Kothi and the Sursagar quarters. The largest number of temples are in the City and Wadi Wards.

Of the total of 22,787 buildings only 4,226 or 18·5 per cent. are *kutcha* built. The smallest proportion of *kutcha* built structures is found in the city district, where the wealthier residents of the older type still reside. Only 123 *kutcha* buildings out of a total of 5,916, or little over 2 per cent. are found in that ward. The other wards are thus arranged according to the frequency of *kutcha* tenements—Wadi (17·1), Babajipura (20·6), Raopura (28·3) and Fatehpura (47·2). 18 out of the 41 factory buildings are in the Raopura ward, mostly in the neighbourhood of the Railway line, which is gradually growing to be a distinctive industrial quarter.

A similar enquiry less detailed however appears to have been taken in the last-census. But the absolute figures are nowhere available. The last Report (p. 24) gives only the bare ratios for the city as a whole. In 1911, 20 per cent. of the houses were shown as *kutcha*. If this proportion is to be believed, then, the present figures show an improvement in the style of buildings.

121. Subsidiary Table VI—Classification by Floors—The marginal statement compares the general result of the classification of floors with the ratios of the pioneer enquiry in 1911 referred to in the above para. The very high structures of 1911 have more or less continued the same, only the ground floor tenements have been either demolished on account of street improvements or been improved to the next higher class.

Percentage to total buildings of buildings with	1921	1911
Ground floor only ..	43	51
Two floors ..	42	41
Three floors ..	14	7
Over 3 floors ..	1	1

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Taking by wards, we see the tallest structures in the City district. Out of 5,916 buildings there, 1,102, or 18·6 per cent. are with ground floors only. But 2,215 or 37·4 per cent. have three floors in that district. There are only 163 buildings in the whole city with more than 3 floors ; of these 135 are in the city district alone. The other wards are hereby arranged according to the percentage of their ground floor tenements to the total structures in each :—Wadi (43·1), Raopura (50·2), Babajipura (52·5) and Fatehpura (65·2). It will be seen that the City Ward just as much outdistances the other in its tall structures as Fatehpura does in the poverty of its buildings.

122. Subsidiary Table VII—Number of Families in Buildings—This table only concerns itself with those of the structures that are private occupied dwelling houses (including shops with residences). These number 15,659, as we have seen from Subsidiary Table V. In these buildings altogether 22,279 families reside, giving a ratio of 142 families to 100 buildings. The different ward ratios in this respect are 171, 142, 140, 129, and 129 for Raopura, Fatehpura, Babajipura, the City and Wadi wards respectively. 75·3 per cent. of the total number of private dwellings in the city contain only one family each ; 17·3 per cent. have two families apiece ; 4·1 per cent. have 3 families ; 1·4 per cent. four ; and 1·9 per cent. have 5 and over. It cannot be said therefore that the problem of overcrowding has attained the dimensions of congested Indian cities like Bombay. The most crowded localities are Raopura and Babajipura, and the least congested is Wadi, from this point of view.

The last part of this table gives the interesting information that 53 per cent. of families in the city reside in houses owned by them and 47 per cent. do so as tenants. House-owners predominate in Wadi and the City Wards mostly; while tenants form the majority in Raopura. In 1911, when this point was also inquired into, 59 per cent. of families were shewn as house-owners.

123. Subsidiary Table VIII—Classification of Buildings by Occupants—This table was prepared by collating the special house-list devised for the city-tenements with the ordinary house-list, wherein a column was added to be filled in at the time of the preliminary enumeration to show the number of residents in the house. The special house-list contained as mentioned already also the census house number, and thus by this means, the number of occupants per individual structure was ascertained. The preliminary enumeration is subjected to the greatest revision in the City, more than anywhere else in the Raj. The figures of occupants represent therefore the normal situation as apart from the distributing factors on the census day. It was a difficult table to prepare, but it was essential to the study of overcrowding in the city. The previous table had prepared us in a way by giving the number of families per house ; and the general conclusions therein formulated are more or less confirmed. In regard to buildings with 5 persons and under, and buildings containing between 6 and 9 persons, the ratios are pretty nearly the same as in the previous table for one-family and two family buildings. Similarly the figures for three and four-family buildings general correspond to those found for buildings containing between 10 and 19 persons ; such is also the case with 5 families and over and 20 persons and over. The most crowded parts of the city as indicated by the table are Raopura and Babajipura. The census circles where this overcrowding is the greatest in Raopura are called "Va," "Sha" and "Sa" * ; in Babajipura, the most congested circles are "Khu," "Khi and "Khe." Curiously enough in the City Ward, which the crude density figures per acre would have made out to be the most congested, there is very little of real congestion in population. The problem in that part is more concerned with the congestion of houses within a limited area than with overcrowding.

It is not possible to find out from this table the exact number of occupants† of these buildings. It must be remembered in any case that these do not comprise the whole population. Only 22,279 families have been considered ; and the city contains a total of 25,623 "inhabited houses" or families. Thus although the two enquiries were not synchronous, still it is possible to say that

* The Census Circles are called by letters of the Gujarati alphabet.

† In compiling this table the totalling form was by blocks and not by individual entries of number of persons per building. Thus it is not possible to find out a total.

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over 3,000 families or 10,500 persons have not been covered by the enquiry. But we may estimate the total number of occupants by giving an average of 3 persons for the first class, 7·5 for the second, 14·5 for the 3rd, and 25 for the last. In this way, we have a total of 74,422 persons residing in 15,659 buildings, giving an average of 4·7 persons per building. Taking this total we may conclude as to overcrowding, that of the total population of the city residing in private dwelling houses, a little less than half or 35,088 persons live in normal conditions in groups of 5 and under. 21,360 persons or about 29 per cent. live in groups of 6 to 10. 17,974 persons, or a little more than 24 per cent. live under abnormal conditions of congestion and lack of privacy.

124. Subsidiary Table IX—We now come to the last of the tenement tables. It is divided into two parts. In the first part the structures are classified according to the number of rooms contained in them. The second part shows how the families are distributed according to the number of rooms in which each lives. The Subsidiary Table gives the summary figures for the whole city only, but also adds the requisite ratios. Of 15,659 buildings only 16·3 per cent. are one-roomed. The highest type of buildings—with 6 rooms and over—indeed forms a higher proportion than the last class, or any other class. The largest number of buildings in the City belongs to this class ; but the majority of these are confined to the City and Raopura Wards. In Fatehpura, the poorest district, the better type houses (with five rooms and over) are only 13·2 per cent. of the total dwelling places in that area.

We can estimate the total number of rooms in the City pretty approximately from this table. If we assume 9 rooms as the average for the highest class, then the rooms number 67,578 altogether. In the previous paragraph we have estimated the total number of occupants at 74,422. Thus the room space per individual person works out at 0·91. In para. 35 of the first chapter we have found the room space per individual in the whole State to be only about 0·4. Thus the room space appears to be much less restricted in the City but it must be understood that in villages, the rooms are larger in area.

In the same table the room-space per each family is analysed. 6,285 families or 28·2 per cent. live in one-roomed tenements ; while only 3,321 or 15 per cent. live in houses with 5 rooms and over under circumstances of comfort. 56·8 per cent. of the families under consideration have an accommodation from two to four rooms each. These conclusions may be compared with the results of the classification of homesteads in the City. In the tenement table, the family is considered as an unit irrespective of its size. In the classification of homesteads on the other hand the unit taken was the adult person or the family of three such adult persons. Where a family was smaller in size, their living even in a one-roomed tenement will not class them as below comfort ; it will take them to the class higher. Secondly the investigations were not synchronous and therefore a proper comparison is not possible. Thirdly for the first class tenements, an exception was made in the standard of comfort enquiry in the normal allowance of two rooms per adult in favour of bungalows, so that five-roomed or even four-roomed bungalows inhabited by a family of three would go up to the first class. In the tenement enquiry however these bungalows will take their class according to their number of rooms.

125. Classification of Homesteads—The general results of the enquiry regarding standard of comfort may now be stated for the City. Of a total of 26,535 tenements or census " houses ", 5,382 or 20 per cent. were found to be " above comfort," 15,812 or 60 per cent. " in comfort " and 5,341 or 20 per cent. were "below comfort." The 5,382 tenements in the first class are supposed to have space allowance according to the definition of at least two rooms per individual adult or six for the standard family of three adult persons. The 5,341 tenements of the third class would presumably allow at most one-third of a room-space to a grown up individual. If the real size of the family at all approached the standard, set in the enquiry, of three adult persons, these figures should have corresponded fairly closely to the results of the tenement enquiry in regard to the number of families in possession of six rooms and above and of those in occupation of only one room respectively ; for it is to these two classes of families that the first and third classes of " houses " may be said to correspond. There is however little correspondence. Subsidiary Table IX shows 6,285 families occupying

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only one room each, and only 1,864 families of the highest class occupying six rooms and above. The lowest class families in this latter enquiry are more and the highest class are less, than what is shewn in the other enquiry. The reader may be assured that both the enquiries were conducted carefully and thoroughly supervised in the City ; and there is no hesitation in vouching for the general accuracy of the results of the enquiry. The only indication then that this lack of correspondence gives us is that both in the lowest as well as in the highest strata of the City's population, instances of families of smaller size than three adults must be fairly numerous. In the lowest class of families their smallness of size takes them out of the third to the second class through the exigencies of the definition, and thus explains why the number of houses below comfort is shewn to be less than the number of families occupying one room. Similarly in the highest class, families of smaller sizes than three would require by the definition less than six rooms ; and thus the number of " houses " above comfort is *more* than the number of families occupying six rooms and over. The factor of bungalows with less than 6 rooms has been also mentioned, and must be also taken as an additional reason for this want of correspondence. But apart from this, that there is a large number of small-sized families recruited from the highest as well as the lowest strata of society in the City is a phenomenon familiar enough to every social worker. This circumstance helps to explain why—if we may anticipate a little—nearly 44* per cent. of the normally resident families in the City consist of less than three persons ; and if it is true, the probability is that the rich, from choice or through the economic strain of living, or else through the peculiar exigencies of their domicile, and the poor, through the operation of disease and chronic want, have both combined to keep the size of their families low, diminish the birth-rate and help the progressive decline of population in the City.

* *Vide* Size of Normal Households, Chapter VI, Part II, para. 242.

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CHAPTER II

SUBSIDIARY TABLE I.—DISTRIBUTION OF THE POPULATION BETWEEN TOWNS AND VILLAGES

Natural Division	Average population per		Number per mille residing in		Number per mille of urban population residing in towns with a population of				Number per mille of rural population residing in villages with a population of			
	Town	Village	Towns	Villages	20000 and over	10000 to 20000	5000 to 10000	Under 5000	5000 and over	2000 to 5000	500 to 2000	Under 500
1	2	3	4	5	6	7	8	9	10	11	12	13
BARODA STATE ..	**9,184**	**581**	**207**	**793**	**269**	**304**	**256**	**171**	..	**174**	**578**	**248**
Central Gujarat (including City) ..	10,458	620	281	719	462	156	175	207	..	189	573	238
North Gujarat ..	10,005	725	167	833	180	437	338	45	..	233	591	176
South Gujarat ..	6,022	382	142	858	..	403	271	326	..	56	532	412
Kathiawad ..	7,310	474	246	754	..	406	328	266	..	41	629	330

SUBSIDIARY TABLE II.—NUMBER PER MILLE OF THE TOTAL POPULATION AND OF EACH MAIN RELIGION WHO LIVE IN TOWNS

Natural Division	Number per mille who live in towns					
	Total Population	Hindu	Musalman	Christian	Jain	Parsi
1	2	3	4	5	6	7
BARODA STATE ..	**207**	**196**	**426**	**271**	**406**	**788**
Central Gujarat (including City)	281	264	449	252	504	953
North Gujarat	166	144	401	497	360	1,000
South Gujarat	141	187	333	400	420	769
Kathiwad	246	208	532	964	442	933

SUBSIDIARY TABLE III.—TOWNS CLASSIFIED BY POPULATION

Class of Town	Number of towns of each class in 1921	Proportion to total urban population	Number of females per 1,000 males	Increase per cent in the population of towns as classed at previous Census					Increase per cent in urban population of each class from 1871 to 1921	
				1911 to 1921	1901 to 1911	1891 to 1901	1881 to 1891	1871 to 1881	(a) in towns as classed in 1871	(b) in the total of each class in 1921 as compared with the corresponding total in 1871
1	2	3	4	5	6	7	8	9	10	11
TOTAL ..	**48**	**100·0**	**919**	**+3·4**	**—7·7**	**—6·7**	**+8**	**—1·1**	**—7·5**	**+3 5**
I 100,000 and over	..	..	..	..	—4·7	—10·5	+10·5	—9·1	—18·1	—100
II 50,000-100,000	1	20·8	845	—4·3	..	..	..	..	..	+ 100
III 20,000-50,000 ..	1	6·1	1,003	—4·7	—12.4	—9·9	—1·2	+3·8	— 14·3	14·3
IV 10,000-20,000 ..	9	30·4	972	+4·5	—11·6	—2·8	+6·7	—2·7	—5·6	—9·2
V 5,000-10,000 ..	16	25·6	933	+10·7	—8·4	—10	+10	+3·8	—1·8	—3·9
VI Under 5,000 ..	21	17·1	873	+3·7	—2·1	—·7	+6	+22	+18·05	+331·6

SUBSIDIARY TABLE IV.—BARODA CITY

City	Population in 1921	Number of persons per sq. mile	Number of females to 1,000 males	Proportion of foreign born per mile	Percentage of variation					
					1911 to 1921	1901 to 1911	1891 to 1901	1881 to 1891	1871 to 1881	Total 1871 to 1921
1	2	3	4	5	6	7	8	9	10	11
1 **BARODA CITY** (with Cantonment).	**94,712**	**7,286**	**837**	**353**	**—4·66**	**—4·28**	**—10·84**	**+9·30**	**—8·39**	**—18.54**
2 City proper	16,888	70,367	932	279	—1·17		Figures are not available.			
3 Fatehpura	9,952	8,363	972	323	— 5·4					
4 Wadi	14,325	4,251	911	242	—12·1					
5 Raopura	25,244	6,954	810	416	— 1·3					
6 Babajipura	22,850	6,740	825	356	— 3·4					
7 Vishwamitri Station ..	167	..	491	722	+85·5					
8 Goyagate Station ..	28	..	647		+16·7					
9 Baroda Station	993	..	251		+83·5					
10 Railway Marshaling Yard	1,331	..	672	669	..					
11 Baroda Camp	2,934	2,934	616	562	—15·6	+·99	—19·9	—15·9	+11·3	—30·4

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SUBSIDIARY TABLE V.—TENEMENT CENSUS—CLASSIFICATION OF STRUCTURES

Name of Section	Private Bungalows and dwelling houses	Shops	Temples, Churches and Mosques	Schools	Dispensaries	Theatres	Godowns	Factories and Mill Buildings	Government offices including Police Stations and Government Residences and vacant official buildings	Others including vacant private buildings	Total	Kutcha structures	Pucca structures
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Baroda City ...	**15.659**	**1,124**	**401**	**45**	**16**	**5**	**258**	**41**	**883**	**4,355**	**22,787**	**4,226**	**18,561**
City Ward ..	4,094	414	80	10	9	..	90	5	59	1,155	5,916	123	5,793
Wadi Ward ..	2,880	107	154	11	1	..	58	6	47	783	4,047	691	3,356
Fatehpura Ward ..	1,805	163	42	..	2	..	35	9	100	441	2,597	1,225	1,372
Raopura Ward ..	3,508	270	56	12	3	3	27	18	282	1,122	5,301	1,170	4,131
Babajipura Ward	3,372	170	69	12	1	2	48	3	395	854	4,926	1,017	3,909

SUBSIDIARY TABLE VI.—TENEMENT CENSUS—CLASSIFICATION OF BUILDINGS BY FLOORS.

Name of Section	Number of structures with					Total No.
	Ground floor only	Two floors only	Three floors only	Four floors only	Five floors only	
1	2	3	4	5	6	7
Baroda City	**9,788**	**9,677**	**3,159**	**158**	**5**	**22,787**
City Ward	1,102	2,464	2,215	133	2	5,916
Wadi Ward	1,746	2,117	181	3	....	4,047
Fatehpura Ward ..	1,693	845	57	2	....	2,597
Raopura Ward	2,661	2,163	458	17	2	5,301
Babajipura Ward ..	2,586	2,088	248	3	1	4,926

SUBSIDIARY TABLE VII.—TENEMENT CENSUS—SHOWING NUMBER OF FAMILIES IN BUILDINGS

Name of Section	Number of buildings containing					Total Number of			
							Families†		
	One family	Two families	Three families	Four families	Five families	Buildings *	Total	Residing in houses owned by them	Residing as tenants
1	2	3	4	5	6	7	8	9	10
Baroda City	**11,797**	**2,701**	**636**	**230**	**295**	**15,659**	**22,279**	**11,785**	**10,494**
City Ward	3,208	711	116	30	29	4,094	5,271	2,962	2,309
Wadi Ward	2,346	381	95	24	34	2,880	3,710	2,331	1,379
Fatehpura Ward ..	1,347	298	99	33	28	1,805	2,556	1,508	1,048
Raopura Wrad	2,336	715	225	96	136	3,508	6,030	2,530	3,500
Babajipura Ward ..	2,560	596	101	47	68	3,372	4,712	2,454	2,258

* Buildings included in this Table are Private occupied Residences, and Residences with shop combined. Compare column 2 of Table V. Occupied official residences, such as official bungalows, Military and Police lines, public school hostels, etc., have been omitted from this Table.

† The total of families shewn in column 8 does not correspond to the Census total of houses, because (i) this tenement-Census was taken in October 1920 and not syncronously with the General Census and (ii) the number does not include families residing in official residences referred to above.

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SUBSIDIARY TABLE VIII.—TENEMENT CENSUS—Classification of buildings by number of occupants

Name of Section	Number of buildings containing				
	5 Persons and under	6 Persons to 9 persons	10 Persons to 19 persons	20 Persons and over	Total number of Buildings
1	2	3	4	5	6
Baroda city	**11.696**	**2.848**	**943**	**172**	**15.659**
City Ward	3,324	603	142	25	4,094
Wadi Ward	2,183	527	142	18	2,880
Fatehpura Ward	1,549	227	25	4	1,805
Raopura Ward	2,325	746	359	78	3,508
Babajipura Ward	2,315	735	275	47	3,372

SUBSIDIARY TABLE IX.—TENEMENT CENSUS—Classification of structures by number of Rooms and distribution of Families by Rooms

Name of Section	Structures with		Percentage of each class of structures to Total	Number of families occupying		Percentage of each class of Families to Total
	Kind	Number		Kind	Number	
1	2	3	4	5	6	7
Baroda city	**Total** ..	**15,659**	**100·00**	**Total** ..	**22,279**	**100·00**
	One Room ..	2,549	16·28	One Room ..	6,285	28·21
	Two Rooms ..	3,144	20·08	Two Rooms ..	6,952	31·20
	Three Rooms ..	1,955	12·49	Three Rooms ..	3,258	14·62
	Four Rooms ..	2,567	16·38	Four Rooms ..	2,453	11·01
	Five Rooms ..	1,597	10·20	Five Rooms ..	1,467	6·59
	Six Rooms and over ..	3,847	24·57	Six Rooms and over ..	1,864	8·37

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CHAPTER III

BRITHPLACE

STATISTICAL DATA

Subject	TABLES		
	Imperial	State	Subsidiary
Birthplace	XI	....	....
Immigration—Actual figures	....	....	I
Emigration—Actual figures	....	....	II
Variation in intramigration	....	....	III
Migration between Baroda and other parts of India	....	....	IV
Migration between Baroda and Bombay Presidency	....	....	IV-A
Immigrants by Age-periods	....	XV	....
Emigrants by Age-periods	....	XVI	....
Immigrants from selected Areas by Age and Occupation for the City of Baroda	....	XXV	....

126. Introductory.—The Statistics of Birthplace are utilised in various ways in this Report. In Chapter I, in the section on Movement of Population, Birthplace figures as an indication of migration were utilised in studying the extent of the natural increase in the population. In the Second Chapter while discussing the variation in urban areas, the migration in certain towns and particularly in the city of Baroda was referred to. In a later Chapter—on Age—the question how far the normal age—distribution of the population is disturbed by the factor of migration will be dealt with. In the present Chapter we are concerned with the broad aspects of the following inter-related questions: whither the population moves, how much of it moves and why it moves at all.

The Census, it may be here premised, does not profess to investigate the answer to these questions directly. The enumerator does not ask the individual how long he has been resident in a particular locality and the character and purpose of his residence. But the entry, in column 12 of the schedule, which gives particulars of his birthplace is utilised as a clue to the question whether he is an immigrant or native born. But this test, obviously artificial in its application, coupled with the fact that the Census professes to record the facts of population only on a particular day, leads to many undoubted anomalies. Stray passengers alighting at Railway stations within the limits of Baroda, even for a very brief sojourn with a view to get into another connecting train, would get recorded as part of the State population, and these persons, whose birthplaces are elsewhere, will figure as "immigrants" in the returns. Similarly persons who are very casual visitors—guests in a marriage party—or pilgrims to a temple town if they are recorded outside the district of their birth, become "immigrants" to the places they visit. A normal resident who has according to the custom of the country taken a wife from another village belonging to an adjoining district has a son whose birth takes place, as usually happens in such cases, in the house of his father-in-law ; this son will appear as an "immigrant." On the other hand a true immigrant having settled at a place has a child born to him there. This child is shewn as native born. These anomalies convict the immigration and emigration figures separately of inaccuracy. But taken together, the net difference between them is a valuable and accurate indication of the trend of movement of people from one place to another. The reason for this circumstance is obvious as the anomalies above pointed out are true not only of immigrants but also of emigrants; and these spurious *va et vient* tend to balance each other. A further reason for trusting the Baroda figures regarding the balance of migration is that the administrative (and natural) divisions are so clearly marked off from one another that there is little chance of any adjustments of divisional boundaries. The separation of Okhamandal from Amreli *Prant* is only in the nature of a minor administrative arrangement, and the former *prant* is so small and isolated that it has little effect on the birthplace figures. This comparative fixity of administrative areas enables us to compare the volume of migration from decade to decade on a somewhat firm and reliable basis.

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127. Accuracy of the Return.—The instructions to the enumerators were not to give more details about birthplace beyond the *district* of birth, if the person was born within the State. If he was born in any Province of British India, the name of the Province was to be added to the district of birth. If he was born in some other Indian State, the name of that State was only to be entered. If he was born out of India, the name of the country such as *England, Nepal, Ceylon* was to be entered. The enumerators were cautioned particularly not to enter the names of villages or tahsils, except in Baroda City, where the Census Staff was required to enter the name of the taluka, if a person was born within Baroda *Prant* but outside the city. To aid their geographical knowledge, a standard list of Districts, Provinces and States of India, together with the names of certain foreign countries was printed and circulated. In the oral lectures, they were also given very detailed instructions and as in respect of other columns, test schedules were prepared in their presence. These instructions were generally understood, but still at the time of tabulation many difficulties had to be overcome. The sorters were cautioned not to let any doubtful case pass by without orders of the Head Supervisor and Assistant Superintendent. Every care was taken to rectify the mistakes. Most of these were errors of compilation. These were tallied with original schedules and finally corrected after local enquiries. A fruitful source of error was no doubt through similarity of names:—Alibag with Aligarh, Mangalore with Bangalore, Jhalawad *Prant* (in Kathiawad) with Jhalawar State in Rajputana, Hyderabad (Sind) with Hyderabad (Deccan) were some of the instances of such confusion. A serious mistake arose, which was fortunately rectified in time, when some sorters mistaking " United" for "United States of America", put down some immigrants from the United Provinces as Americans.

128. Types of Migrants.—At the outset of the discussion of the figures it is usual to distinguish five types of migration :—(*a*) *casual migration* or minor movements between adjacent villages belonging to different districts or jurisdictions ; (*b*) *temporary* : due to business visits, or pilgrimages or occasions of religious or social festival, or the temporary demand for labour on public works such as roads and railways; (*c*) *periodic*: such as recurring outflow of labour from the country, when agriculture is slack, for employment in ginning factories and other seasonal industries; (*d*) *semi-permanent* : this type occurs when natives of one place reside in another for earning their livelihood although they have still left their families behind, to which they return occasionally or in old age, when they have retired from their work ; this type of immigrant in India is represented by the European official for instance, who varies his stay in this country by periodical sojourns to his home-land; and (*e*) *permanent* where natives of one place, permanently settle elsewhere with their families. These categories, stated as above, would seem to envisage clear-cut, distinct divisions. But as a matter of fact, the boundaries between them shade into one another imperceptibly. In the classification pursued in the last census, the casual migrants included the cases of wives born in one place but married in another and also of their return to their parents' houses on the occasion of their first confinements. As Pandit Harkishen Kaul pointed out in his Punjab Report of 1911, the former of these cases is really one of permanent, not casual, migration. The wife's coming to her new home is really in the nature of a permanent change of residence, although her life in her new home may be varied occasionally by visits to her father's house. Such a change of residence cannot be therefore classed as casual. The second case of the wife returning to her father's for her confinement is really in the form of *casual emigration* from her permanent home, and wrongly reduces the volume of permanent migration. With some communities it is considered objectionable for the mother to visit her daughter on the occasion of her first confinement. Here the daughter has to visit more as a matter of etiquette than otherwise. Amongst the lower classes journeys on account of confinements are not known however to be very frequent.* At any rate in whatever way we look at it, the fact remains that the sex proportion in such movements is preponderatingly in favour of the females.

129. Clues to types of Migration.—The census, of course, does not distinguish between these different types in its schedules but it is through the sex-

* The immigrants from contiguous areas have been distributed by age in the State Table XV. In that table there are shewn 34,540 women aged 15-40. There are however only 5,401 children aged 0-5. So the visits to the parental home could not have been many in the case of these women.

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ratios, that we are able to judge mainly of the character of the migration. As just shewn, migration due to marriages will have a preponderance of females. Migration due to pilgrimages leads also to an excess of females. The bulk of the temporary or semi-permanent migrants are men : and the *proportion* of women amongst them varies inversely with the distance of the district of their birth from the district of their enumeration. In the margin the immigrants from non-contiguous areas are arranged roughly according to distance. Under "Fairly Near" areas, we have grouped Rajputana States (with Ajmer-Merwara), Central India Agency and Gwaliar State, the non-contiguous areas of Bombay Presidency and States and Portuguese India. Under "Remote" we have counted the provinces of Delhi, Punjab, the United Provinces, Bihar and the Central Provinces, (with their respective States) and the Indian State of Hyderabad. Under "Very Remote," we have the other parts of India, not enumerated above, and Aden. These groups together with immigrants from contiguous areas and also from Outside India yield the sex-ratios as shewn in the margin. In contiguous areas, where migration takes the form mostly of bridal exchanges, women bulk more largely than males. In the remoter areas, from which the immigrants represent a real movement of population for labour, trade or settlement, the females are less in evidence in proportion as the distance travelled is greater. In regard to "Very Remote areas" the ratio of female immigrants would have been much smaller, had it not been for a special reason to be mentioned presently. The sex ratio amongst extra Indian immigrants will also be explained at its proper place.

Immigrants from			Percentage of female immigrants to male
Kind of area	Males	Females	
Contiguous areas ..	77,585	121,314	156
Fairly Near areas ..	14,658	11,601	79
Remote areas ..	4,160	1,550	37
Very Remote areas	737	275	37
Outside India ..	326	288	88
Total ..	97,466	125,028	139

130. Main Figures of Immigration.—The total population of 2,126,522 enumerated in Baroda State in the recent census comprises 1,894,028 persons or 891 per mille born within the State and 232,494 or 109 per mille born outside it. Of the population born and enumerated within the State, 1,881,250 were enumerated within the districts of their birth, and 12,778 were born in one district and enumerated in another in the State. Of the persons enumerated within the State, but born outside it, 198,899 come from contiguous areas of Bombay Presidency and States, 32,981 come from non-contiguous provinces and states and 614 from outside India. In the margin, a statement is given which shows the respective proportions, in the State as a whole and in the Natural Divisions separately of those, enumerated in the district of their birth, of person enumerated in other districts and of immigrants from areas outside the State. It is to be noticed in each of the Natural Divisions, that the contribution of the adjacent areas of foreign jurisdiction to the divisional total is much greater than that of the other parts of the State. This is naturally to be expected, as the different divisions are separated from one another. The contribution of the contiguous foreign areas is the least in the Northern Division, which is the most compact, and greatest in the Kathiawad Division which is the most interlaced with the territories of other States. South Gujarat which is also much intermixed with the British District of Surat, shows the next largest proportion of immigrants from contiguous areas. Central Gujarat containing the Capital has naturally the largest number of immigrants from the other parts of the State. Immigrants from non-contiguous areas are also most in evidence in Central Gujarat. Persons with birth-places outside India muster strongest in South Gujarat, but presumably these are not "true" immigrants. The connection of that division with Africa, particularly East and South Africa, and Mauritius, is of

Proportion per mille of actual population born in	Enumerated in				
	State	Central Gujarat	North Gujarat	South Gujarat	Kathiawad
District of Enumeration	885	855	934	859	804
Other parts of the State..	6	9	3	5	5
Contiguous Areas of other Provinces and States.	93	87	42	114	173
Non-contiguous Areas ..	16	49	21	21	18
Outside India	..	..	..	1	..
Total ..	1,000	1,000	1,000	1,000	1,000

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long standing. The bulk of those returned as having their birthplaces outside India, are the families of returned emigrants from these parts. The majority of Europeans and Americans reside in the Capital or in the Cantonment adjacent to it. In 1911, 885 per mille of the total population were found in the district of their birth, five were recorded in other districts, and 92 returned birthplaces within the contiguous areas. Only 530 persons or 3 per 10,000 of the population were returned as being born outside India.

131. Main figures of Emigration.—As with immigrants, we give also another table for emigrants, *i.e.*, persons born in the State, but enumerated outside it. A complete record of Baroda-born persons enumerated elsewhere would have been a valuable basis for the study of the State population. We have only however the figures of the Indian Census to go upon. At the time of writing only the Census figures of the Baroda State emigrants for Ceylon, Kenya and Nyasa land, are available, but, as will be shewn later, these figures are not an adequate expression of the volume of extra-Indian emigration from this State. We will therefore content ourselves by calculating the natural population on the basis of the Indian figures only. On this basis out of a thousand of the natural population, 890 are enumerated in the districts of their birth, and 6 are recorded elsewhere in the State, 95 are found in the contiguous tracts, and the remaining 9 are enumerated elsewhere in India. It will be seen that the migration in the contiguous areas is pretty fairly balanced, but that in the rest of India, less Baroda-born persons are found than are persons from those parts observable within the limits of this State. In Central Gujarat it may seem curious that the number of emigrants to non-contiguous areas is larger than to contiguous. But the reason simply is that the district of Ahmedabad, which is not strictly contiguous to this division alone draws 16,289 or nearly one-seventh of its total emigrants. Kathiawad and North Gujarat Divisions have apparently the most home-living population, for there, as the figures show, the emigrants form the lowest proportion of the total natural population. The proportion of persons enumerated in the districts of their birth is also the largest in these two divisions.

Proportion per mille of Natural Population enumerated in	Born in				
	State	Central Gujarat	North Gujarat	South Gujarat	Kathiawad
District of Birth	890	851	914	898	909
Other parts of State ..	6	6	5	5	14
Contiguous Areas ..	95	69	64	68	45
Non-contiguous areas ..	9	74	17	29	32
Outside India	Not available.				

132. Intermigration within the Divisions.—As pointed out already, the geographical situation prevents any large interchange between the districts of the State. But this interchange seems to have increased as will appear from the margin, since 1911. Central Gujarat with the City generally receives much more, than it gives to other divisions. North Gujarat shows the next largest movement of this kind. In the two other divisions, the interchanges are not so significant. Comparing the figures of the two censuses, Central Gujarat shows increases both in the number of its immigrants from, as well as its emigrants to, other divisions. But it seems to have sent out more than it received, during the decade. On the other hand, North Gujarat, has doubled its number of immigrants from the other parts of the State, while its contribution to the population of the other divisions is now much less. Kathiawad appears to have given very largely to other divisions in the last ten years; its immigrant figures show also a slight increase compared to 1911. Subsidiary Table III gives the detailed figures in this connection.

Natural Division	Receives from other Divisions			Gives to other Divisions		
	1911	1921	Variation	1911	1921	Variation
Central Gujarat ..	6,356	6,685	+329	3,183	4,500	+1,317
North Gujarat ..	1,734	3,549	+1,815	4,834	4,401	—433
South Gujarat ..	1,724	1,708	—16	1,231	1,696	+465
Kathiawad	726	836	+110	1,292	2,181	+889

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The sex ratio of this intra-migration in 1921 is 82 females to 100 males, and in 1911, there were 74 females to 100 males amongst this class of migrants. As Mr. Govindbhai indicates, this type of migration is of a semi-permanent nature. State servants born in one district are found serving in another. Also artisans, traders and contractors migrate from their home-district in search of work to other parts of the State. Railways and other public works absorb labour of this kind sometimes from the different districts.

133. Migration between Baroda and Contiguous Foreign Territory.—Baroda State is entirely encircled by the districts of Bombay and the States in political association with that Presidency. It is the migration between the different divisions of this State and these territories that form the largest proportion of the migration-figures. Of the total number of 232,494 immigrants, 198,899 or 86 per cent. come from contiguous areas. As in immigration, so in emigration, the greatest number of the Baroda born that are enumerated outside the State are found within these contiguous areas. Of the total number of 221,206 emigrants from this State 198,548 or 90 per cent. are found within the Bombay Presidency and States. The marginal table gives comparative figures of these exchanges for the last two censuses; the detailed figures per sex are given by the different districts and states in Subsidiary Table IV-A. In regard to contiguous British Districts, this census shows that we are still losing through migration. In respect of contiguous Indian States, the 1921 figures show a balance in favour of this State, so that taking the two together, the large adverse balance of migration which amounted in 1911 to—28,743, has now been reduced to only—3,462. The exchanges with contiguous British territory are mainly in the nature of marriage-migration. Certain of the villages in British Charotar form with others in our territory an endogamous *gol* (circle) for *Kulin* Patidars (Lewa Kanbis of the landlord status). Similarly Kadwa Kanbis, I understand, of South Gujarat, form another endogamous group of this kind. There is thus a frequent interchange of wives between Baroda *Prant* and Kaira and Broach Districts, and the Rewa Kantha Agency; between Navsari, Surat and the States of the Surat Agency; between Kadi, Ahmedabad, Palanpur and Mahikantha Agencies; and between the Gaekwad's portion and the rest of Kathiawad. These marriage migrations result in the issue being often born in one part and enumerated in the other. The "true" migrants are those who come into towns from neighbouring villages for seasonal industries, and the semi-permanent settlement within Baroda State of persons from Ahmedabad, Surat and Kaira, and of Baroda-born persons in Ahmedabad and Surat in Government or State employment. According to the Bombay Census Report of 1911, there was a movement from Baroda State presumably from Navsari *Prant* to Khandesh West, where "the rich lands of the Tapti had been recently opened up, which must be considered to be of the nature of a permanent settlement." The emigrants to West Khandesh have increased from 1,426 in 1911 to 2,174 in this census. It is not possible to ascertain what proportion of the migrants in these contiguous areas represent real movement of population. But one test might be suggested. Of those contiguous areas, there are some places which are, though contiguous to the State are not adjacent to all its parts. Thus Ahmedabad is not contiguous to Baroda, or Surat to Amreli *Prant*; migration between such areas may roughly represent real migration, and not consequent on social exchanges. By the courtesy of the Bombay Superintendent, I am enabled to study detailed figures of emigrants from Baroda by the different *Prants*. From this source and our own Imperial Table XI, we learn that the Central Division including the City receives 3,661 persons from, and gives 16,289 to, Ahmedabad. The sex ratio indicates that this migration is more or less permanent or at least semi-permanent. The same division receives 2,572 from, and gives 2,823 to, the Surat District. Generally in these "true" exchanges the British Districts take away far more than they give to the State. In Kathiawad the position is somewhat different. The Baroda-born found in the

Province or State		Year	Gives to Baroda	Receives from Baroda	Gain (+) or loss (−) to Baroda
Contiguous British Districts.	..	1921	111,507	125,837	− 14,330
		1911	114,359	135,498	− 21,139
Variation	..		−2,852	−9,661	
Contiguous Indian States.	..	1921	87,041	76,173	+ 10,868
		1911	73,240	80,844	− 7,604
Variation	..		+13,801	− 4,671	

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portion of Kathiawad not belonging to this State number 21,040. The immigrants from these parts to this State on the other hand number 47,385 or more than double. Excluding the immigrants to Amreli and Okhamandal *Prants* as being of the spurious type noted above, we see that Kadi *Prant* receives 9,362 from this quarter, but gives only 409. Baroda *Prant* with the City receives 6,480 from foreign Kathiawad, and gives 6,910. The respective figures for Navsari *Prant* are 1,467 and 5.

This Kathiawad migration is important, for it gives Baroda the largest item in its favour in the balance of migration. In the marginal table given at the head of this paragraph, the migration figures regarding British Districts are shewn to have declined, the emigrants rather more than immigrants since 1911. In regard to contiguous Indian States, however, although the emigrants have declined by 4,669, the immigrants have increased by 13,801. Applying the Longstaff method described in para. 43 of Chapter I, we get 46,857 immigrants from, and 26,733 emigrants to, contiguous Indian States, during the decade. The total volume of migration in the decade in North Gujarat and Kathiawad divisions of the State has been also calculated in paras. 69 and 71 of that Chapter. In these two divisions, in the last ten years there were 49,373 immigrants and 33,174 emigrants according to this method of calculation. The net gain through migration in the ten years in these two divisions was thus 16,199. In our Northern Division, the immigrants from foreign Kathiawad increased from 2,637 to 9,362 in the decade. In the Gaekwad's Kathiawad, the immigrants from the same area numbered 30,076 in 1921, as against 30,390 in 1911. Both these divisions show gains in migration in the ten years; and as the Gaekwad's Kathiawad is hardly likely to attract settlers except from the surrounding country, the gain in the balance of migration during the decade must be attributed, in regard to this division wholly, and in respect of North Gujarat to a great extent, to immigration from foreign Kathiawad. The influx of Jhalawadi Kanbi settlers—the bulk of them from Dhrangadhra State and the Thakrati Girasia villages from over the border—was a feature of the movement of population in Kadi *Prant* in the last ten years. There was room enough in West Kadi, where the leasing of large plots of arable land to cultivators on easy (*istava*) terms, attracted settlers from the neighbouring villages from across the frontier. The addition of 5 new villages and 41 hamlets in this *prant*, already mentioned in para. 69, must be mainly put down to this cause.

134. Migration between Baroda and non-contiguous areas—Bombay, Rajputana, the United Provinces and Central India Agency.—32,981 persons were enumerated in the recent Census, who were born in non-contiguous areas in India. In 1911, the persons born in non-contiguous areas but enumerated here totalled 34,828. Thus there is a decline in this class of persons. The emigration figures show 19,196 Baroda State-born persons enumerated in the non-contiguous areas in the recent Census. The corresponding figure for 1911 was 19,181.

Taking the figures regarding non-contiguous areas a little more in detail, we append in the margin a small table to show the state of things in this matter in the Provinces with which this State is most concerned. In the non-contiguous areas of the Bombay Presidency and States, the three most important places from the point of view of Baroda migration are Bombay City, Ratnagiri and Sind. Bombay City gives to this State only 3,700, but takes away 9,757. Ratnagiri supplies the State with so many Maratha families of semi-permanent or even permanent immigrants. Sind sends us 907 persons against 183 in exchange. The Sindh i Musalmans in the Army and the Police are the bulk of these immigrants. A few Sindhi Hindu contractors, students and merchants are also found

Name of Province or State	Immigrants from		Emigrants to	
	1921	1911	1921	1911
Bombay Presidency * and States .. .. (non-contiguous)	17,290	20,149	13,271	8,522
Rajputana Agency and Ajmer-Merwara ..	7,583	6,418	1,096	1,825
United Provinces (with States) ..	3,932	3,907	183	302
Central India Agency and Gwaliar	1,121	1,413	2,320	2,482

* Under Bombay Presidency is includeed "Bombay Unspecified"

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in the City and elsewhere. There is an item in the Immigration figures called "Bombay unspecified" which absorbs 2,373 males and 2,886 females. A great part of these presumably come from Bombay City. A few entries of unidentifiable British or other outside villages may have been also classified under this head.

Outside Bombay Presidency, the unit that has the largest dealings with this State is the Rajputana Agency (with Ajmer Merwara). The number of immigrants from that area returned in this census totals 7,583 persons. In the margin, this figure is distributed according to religion. 76 per cent. of these immigrants are Hindus—mostly Marwadis, Brahmans and Vanias. The bulk of Musalmans from Rajputana come from Ajmer and thereabouts. The Jains are of course the Marwadi traders and money-lenders. The Animists are the few Rajputana Bhils found in North Kadi. The others include Hindu Aryas and Christians. These immigrants are found mostly in Central and North Gujarat, Baroda City alone having 1,186, mostly engaged in trade and usury. A great many of the Marwad Brahmans are found in Kadi *Prant* engaged as *pahnkas*—known also in Upper India as *pani pandés*—water-suppliers to caste Hindus. The immigrants from the United Provinces consist mostly of sepoys and constables in the Army and the Police Force; most of the immigrants from these Provinces found in the City and Amreli and Okhamandal *Prants* are of this character Of those found in the Kadi *Prant* a great many follow other occupations as labourers and *halwais* (sweetmeat sellers)—and some few are in Railway and State employ. The Central India Agency immigrants are either traders, labourers or servants. Generally the figures show a decline in immigration from these places since 1911. Probably the continued agricultural and economic depression may have driven many back to their homes, those that remained must have had their ranks considerably thinned by the heavy mortality of the period. The United Provinces figures show a slight increase.

Rajputana immigrants by Religion

Religion	Number of immigrants	Per cent
Hindu ..	5,757	76
Musalman ..	914	12
Jain ..	754	10
Animist ..	100	1
Others ..	58	1
Total ..	7,583	100

The figures of emigration show a large increase in regard to the non-contiguous areas in Bombay Presidency; but this increase is mostly confined to Bombay City. In 1911, there were 4,501 Baroda-born persons enumerated in that City. In 1921, this number has risen to 9,757 or more than double. The number of male emigrants is now 6,563, against only 3,255; the females have risen similarly from 1,246 to 3,194. The outflow of Baroda State emigrants to Bombay City is mainly confined to the educated classes. The trading as well as the skilled artisan classes amongst Vohoras, Parsis, Vanias and other Hindus send out their best to try their fortunes in that city of opportunity. Amongst the emigrants to Bombay City, the bulk come from Baroda *Prant* which sends 7,395 emigrants. The emigrants to Rajputana and other places show a decline in their numbers since 1911.

135. Migration to or from Other Places.—Excepting the contiguous areas, and the provinces and states named in the preceding paragraphs, the exchanges with the different parts of India are numerically insignificant. The Punjab sends 714 immigrants—in 1911, the number was 921; the Central Provinces with 565, Madras with 264, Bengal with 257, and Baluchistan with 232 immigrants are the only other mentionable contributors. Immigrants from these places in 1911 were larger in number. Comparing these figures with those of emigration, we find that we receive more from these places than we send out to them. The Punjab immigrants are mostly sepoys and policemen and not infrequently workmen on the Railway. The Central Provinces migrants are mostly Marathas or other Deccanis, in the class of "Marriage-migrants" described above. The Bengalis and Madrasis are either temporary immigrants like pilgrims or students, or semi-permanent immigrants like servants in the State employ. Emigrants to Bengal or Madras are mainly traders to Calcutta or Madras Cities. Baluchistan Agency sends 232 persons (206 males and 26 females), mostly Makranis in the Police force.

Immigration from other places is insignificant. Burma sends usually Musalmans. From Rangoon a party, consisting largely of females, accompanied some Musalman Pir, and as they were passing through Navsari, they were enumerated

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there. This fact accounts for the preponderance of female immigrants from Burma in the returns.

Emigration to two other places * deserves note, as showing a large change from the figures of 1911. In that year, emigrants to North-West Frontier Province numbered only 11. In 1921, the figures returned were 228. These emigrants are reported to be included in the military units stationed at Peshawar Cantonment and Trans-Frontier posts of that Province. Possibly some were Maratha Sepoys but the others must be non-combatant units attached to some regiment or other. Assam registered no emigrants from this State in 1911: in 1921, however, there were 125 Baroda-born persons enumerated. Of these 110 were males and 15 females. Of these males, as many as 65 belong to the tea-gardens.

136. Extra-Indian Migration—*Immigration from Overseas.*—614 persons (326 males and 288 females) were recorded in the Census as having their birth-places outside India. Of these 158 are from Asia, 371 from Africa, and only 64 from Europe and 21 from America. As to the Africa-born immigrants it has been already pointed that in many cases they are not true immigrants at all. They are the families, born in Africa, of repatriated Indian emigrants. A fair number are native African, or Africa-born Dutch, women, who have been brought as wives by the Musalmans of Kamrej, Navsari and Mangrol talukas. This accounts for the fact that amongst the Africa-born persons, there are 211 females to 160 males. These persons of African birth are mainly found in South Gujarat, which as we shall presently show, is most largely concerned with the African migration. The immigrants from Europe are mostly European residents and their families in or near the City of Baroda. France is shewn as sending 1 male and 10 females. On enquiry it is found that some of these French women are wives of Vohoras in the Navsari *Prant*. The United States send 21 persons (8 men and 13 women) mostly missionaries stationed in the City and Vyara town.

137. Emigration to Overseas.—The emigration to overseas is more difficult to estimate. The census figures of only a few places are available and are given in the margin. These figures do not convey as already pointed out an adequate idea of the extra-Indian enterprise which is becoming an increasing feature of our Baroda migration. In 1911, an attempt was made to estimate the number of natives of Baroda who were resident abroad. Taluka Vahivatdars were asked to furnish statements of Baroda-born persons who were known to have been residing abroad. As the facts were supposed to be well known to the village officials, the statements may be regarded as fairly accurate. Similar statements rather more in detail were asked for on this occasion also; and the comparative figures are given in the margin. The Kadi figures for 1921 seem a little unreliable, but all the other divisions show large increases since 1911. From the emigration statistics furnished by the Political office from the Register of Passports issued to emigrants from August 1915 to May 1921, it will be seen that altogether in this period 833 passports were issued to emigrants from the Central Division, 444 to the Northern, 1,211 to the Southern and 223 to the Kathiawad Division. From these facts, it appears that figures obtained by local inquiry regarding the Northern Division and shewn in the above table are not very trustworthy. At any rate the figures regarding passports give some idea of the movement during the decade. Altogether 2,711 passports have been issued in these 6 years. If we allow for cases of duplications, *i.e.*, of passports being issued more than once to one and the same person, we may take the above figure (2,711) to represent the number of actual persons who

Baroda-born persons enumerated in			
	Total	Males	Females
Ceylon ..	3	3	..
Kenya ..	379	293	86
Nyasaland ..	14	14	..

Baroda subjects residing outside India		
	1921	1911
Central Gujarat ..	844	94
North Gujarat ..	387	810
South Gujarat ..	3,802	2,499
Kathiawad ..	377	152
Total ..	5,410	3,555

* Besides these places, Burma has to be added. Just before finally passing the proofs for print, I get the Burma figures for emigrants who appear to have increased from 136 to 662 in this census. The exodus of Vohoras from Kamrej and Velachha seems from these figures to have increased.

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left during the decade.* This is a very large movement for Baroda. If we consider the figures of true emigration during the decade to non-contiguous areas, we will see that the movement to Africa and such other places has been even larger and more important.

In the margin are given figures (based on taluka statements) regarding Baroda-born persons known to reside in places abroad. It is interesting to note regarding this table that the estimate it gives of emigrants to certain places is rather less than the truth. Kenya for instance shows 292 emigrants in this table, but from census figures as already shewn, 379 Baroda-born persons are returned as enumerated there. Africa absorbs the largest number of our emigrants—particularly South Africa. The character of this migration is also indicated by the local reports. The emigrants from Navsari *Prant* are mostly Kolis for industrial labour. There are also Vohoras and Anavalas as traders and clerks. Most of the Baroda *Prant* emigrants are from Charotar, and they generally go in for small trading in South Africa (especially Natal). The number of Kadi *Prant* emigrants is not large, but they are mainly to Abyssinia and the Somali Coast. Much of the African trade of these parts is in the hands of Sidhpur Vohoras. The movement to Iraq is new and the result of the War. The residents in the United Kingdom and United States of America are students, mainly dependent on State-scholarships.

Residing in	Native place in				
	Central Gujarat	North Gujarat	South Gujarat	Kathiawad	Total
United Kingdom ..	3	10	..	1	14
Other places in Europe ..	..	19	..	1	20
United States of America	..	..	2	1	3
Other places in America	1	..	..	..	1
Iraq	..	34	44	4	82
Arabia	..	34	16	..	50
Strait Settlements ..	8	5	3	6	19
Other places in Asia ..	5	1	..	10	16
Kenya	193	35	39	25	292
Portuguese East Africa ..	2	..	5	18	25
South Africa	67	33	1,128	5	1,233
Other places in Africa ..	298	165	2,442	309	3,214
Outside India unspecified	267	51	123	..	441

138. Volume of Migration since 1911.—Already in Chapter I (*vide* para. 58) the volume of migration has been estimated according to the method favoured in this Report. 100,593 persons were estimated to have come, and 76,685, to have left, during the last ten years. This would give a rate of movement of 4·8 per cent. for immigrants, and 3·7 per cent. for emigrants of the mean population of the decade. But as we know about 86 to 90 per cent. of this migration is with contiguous areas; and the vast bulk of this contiguous migration is of the type of bridal exchanges. If we exclude therefore 80 per cent. of emigrants from the above figures, we get at roughly what may be regarded as the true migration during the decade. Thus we get 20,118 immigrants and 15,337 emigrants. These figures are, as pointed out in that chapter, exclusive of overseas emigration. We have now estimated about 2,700 persons to have left Baroda during the decade. Approximately therefore the balance of true migration in the favour of this State is only 2,000.

139. Immigrants by Religion.—One last item may be mentioned before this Chapter is closed. It may be of interest to know the religious distribution of migrants. Such information is only available regarding immigrants, and has been specially compiled in this Census from the Compilation Register. The margin gives the requisite proportions of the immigrants per each main religion. The vast majority of immigrants is of course Hindu, but it is interesting to compare these ratios with the general religious distribution of the State. 819 per mille of the total population are Hindus, 76 are Musalmans, 20 are Jains, 77 are Animists, and only 4 are Parsis. Thus Musalmans and Jains contribute more largely to the immigrant total than their actual strength in the general population would seem to indicate. About one-eighth of Hindus, a similar proportion of Musalmans, less than one-tenth of Animists, more than one-sixth of Jains, one third of Christians and the bulk of Hindu Aryas, Brahmos, Sikhs and Jews are immigrants.

Immigrants by Religion	Proportion per mille of total
Hindu ..	810
Musalman ..	90
Jain ..	29
Animist ..	56
Christian ..	9
Parsi ..	5
Hindu Arya and others.	1

* In para. 58, on the basis of the taluka figures, the emigration to overseas during the decade was estimated at 1,500.

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SUBSIDIARY TABLE I—IMMIGRATION (ACTUAL FIGURES)

Natural Division where enumerated	Born in																	
	Division of enumeration			Contiguous divisions in the State			Other parts of the State			Contiguous parts of other provinces, etc.			Non-contiguous parts of other provinces, etc.			Outside India		
	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Baroda State ..	**1,881,250**	**996,090**	**885,160**	..	..	..	**12,778**	**7,008**	**5,770**	**198,899**	**77,585**	**121,314**	**32,981**	**19,555**	**13,426**	**614**	**326**	**288**
Central Gujarat ..	604,769	330,551	274,218	..	..	..	6,685	3,549	3,136	61,427	22,846	38,581	34,458	19,384	15,074	173	112	61
North Gujarat ..	840,965	438,439	402,526	..	..	..	3,549	1,780	1,769	37,469	11,817	25,652	18,542	8,979	9,563	53	37	16
South Gujarat ..	292,386	149,066	143,320	..	..	..	1,708	1,080	628	38,785	16,623	22,162	7,170	4,098	3,072	323	135	188
Kathiawad	143,130	78,034	65,096	..	..	..	836	599	237	30,822	11,198	19,624	3,207	2,195	1,012	65	42	23

SUBSIDIARY TABLE II—EMIGRATION (ACTUAL FIGURES)

Natural Division of Birth	Natural Population (State-born but enumerated anywhere in India)			Enumerated in					
				Natural division of birth			Contiguous divisions in the State		
	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
1	2	3	4	5	6	7	8	9	10
Baroda State	**2,115,234**	**1,100,442**	**1,014,792**	**1,881,250**	**996,090**	**885,160**	..	..	..
Central Gujarat	711,561	378,109	333,452	604,769	330,551	274,218	..	..	..
North Gujarat	920,443	474,131	446,312	840,965	438,439	402,526	..	..	..
South Gujarat	325,792	163,921	161,871	292,386	149,066	143,320	..	..	..
Kathiawad	157,438	84,281	73,157	143,130	78,034	65,096	..	..	..

Natural Division of Birth	Enumerated in											
	Other parts of the State			Contiguous parts of other Provinces			Non-contiguous parts of other Provinces			Outside India		
	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
1	11	12	13	14	15	16	17	18	19	20	21	22
Baroda State	**12,778**	**7,008**	**5,770**	**202,010**	**84,884**	**117,126**	**19,196**	**12,460**	**6,736**	**396**	**310**	**86**
Central Gujarat	4,560	2,510	1,990	49,343	18,238	31,105	52,949	26,810	26,139	Figures are not available.		
North Gujarat	4,401	2,631	1,770	58,797	25,259	33,538	16,280	7,802	8,478			
South Gujarat	1,696	751	945	22,226	9,523	12,703	9,484	4,581	4,903			
Kathiawad	2,181	1,116	1,065	7,017	2,718	4,299	5,110	2,413	2,697			

The figures for "Outside India" not being completely available, the total of Natural Population has been calculated only on figures as supplied by the various Census Superintendents of Indian Provinces and States.

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SUBSIDIARY TABLE III—Migration between Natural Divisions (actual figures compared with 1911.)

Natural Division in which born		Number enumerated in Natural Division			
		Central Gujarat	North Gujarat	South Gujarat	Kathiawad
1		2	3	4	5
Central Gujarat	1921..	604,769	2,893	1,257	350
	1911..	583,721	1,406	1,295	482
North Gujarat	1921..	3,741	840,965	237	423
	1911..	4,307	787,004	324	203
South Gujarat	1921..	1,450	183	292,386	63
	1911..	1,060	130	285,238	41
Kathiawad	1921..	1,494	473	214	143,130
	1911..	989	198	105	143,338

SUBSIDIARY TABLE IV—Migration between the Baroda State and the other parts of India

Provinces and States	Immigrants to the Baroda State			Emigrants from the Baroda State			Excess (+) or deficiency (—) of immigration over emigration		Remarks
	1921	1911	Variation	1921	1911	Variation	1921	1911	
1	2	3	4	5	6	7	8	9	10
Total ..	**231,880**	**222,427**	**+ 9,453**	**221,206**	**235,523**	**— 14,317**	**+ 10,674**	**— 13,096**	
British Provinces	*134,169*	*140,189*	*— 6,020*	*141,228*	*145,439*	*— 4,211*	*— 7,059*	*— 5,250*	
Ajmer-Merwara	110	179	— 69	234	224	+ 10	— 124	— 45	
Andamans & Nicobars	2	..	+ 2	16	8	+ 8	— 14	— 8	
Assam	2	6	— 4	125	..	+ 125	— 123	+ 6	
Baluchistan	..	..	..	12	7	+ 5	— 12	— 7	
Bengal	257	332	— 70	199	124	+ 75	+ 63	+ 208	
Bihar and Orissa ..	42	150	— 113	107	99	+ 8	— 70	+ 51	
Bombay	128,022	134,062	— 6,040	138,838	143,661	— 4,823	—10,816	— 9,599	
Burma	88	63	+ 25	661	136	+ 525	— 573	— 73	
Central Provinces and Berar	565	321	+ 244	376	375	+ 1	+ 189	— 54	
Coorg	..	..	..	..	..	..	..	..	
Madras	264	228	+ 36	130	318	— 188	+ 134	— 90	
North-West Frontier Province	65	39	+ 26	228	11	+ 217	— 163	+ 28	
Punjab and Delhi ..	873	910	— 37	119	178	— 59	+ 754	+ 732	
United Provinces ..	3,879	3,899	— 20	183	298	— 115	+ 3,696	+ 3,601	
Indian States and Agencies	*97,711*	*82,238*	*+ 15,473*	*79,978*	*90,084*	*— 10,106*	*+ 17,733*	*— 7,846*	
Baluchistan Agency ..	232	41	+ 191	..	..	..	+ 232	+ 41	
Bengal States	..	..	..	..	..	..	..	..	
Bihar and Orissa States	..	..	..	46	9	+ 37	— 46	— 9	
Bombay States	87,816	73,686	+14,130	76,443	85,646	— 9,203	+11,373	—11,960	* These figures include those of Gwalior.
Burma States	..	..	..	1	..	+ 1	— 1	..	
Central India Agency ..	744	*1,413	— 669	1,741	*2,482	— 741	— 997	— 1,069	
Central Provinces States	..	..	..	17	34	— 17	— 17	— 34	
Cochin State	..	..	..	9	..	+ 9	— 9	..	
Gwalior State	377	†..	+ 377	579	†..	+ 579	— 202	..	†These figures are included in the Central India Agency figures.
Hyderabad State ..	267	164	+ 103	198	204	— 6	+ 69	— 40	
Kashmere State ..	6	18	— 12	6	4	+ 2	..	+ 14	
Madras States	..	..	..	..	2	— 2	..	— 2	
Mysore State	15	32	— 17	72	46	+ 26	— 57	— 14	
Punjab States	31	11	+ 20	..	47	— 47	+ 31	— 36	
Rajputana Agency ..	7,473	6,239	+ 1,234	862	1,601	— 739	+ 6,611	+ 4,638	
Sikkim State	..	..	..	..	1	— 1	..	— 1	
Travancore State ..	..	..	..	4	4	..	— 4	— 4	
United Provinces States	53	8	+ 45	..	4	— 4	+ 53	+ 4	
India Unspecified ..	72	67	+ 5	..	..	..	+ 72	+ 67	
Foreign Settlements ..	625	559	+ 66	..	..	..	+ 625	+ 559	

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SUBSIDIARY TABLE IV-A—SHOWING THE NUMBER OF IMMIGRANTS AND EMIGRANTS FROM AND TO THE BOMBAY PRESIDENCY

District or State	Gives to Baroda		Receives from Baroda		Gain (+) or loss (—) to Baroda		
	Males	Females	Males	Females	Males	Females	Total
1	2	3	4	5	6	7	8
Bombay Presidency	*** 86.484**	*** 129,347**	*** 93.515**	*** 121,766**	**— 7,031**	**+ 7,581**	**+ 550**
Bombay Districts	*49,891*	*72,865*	*65,437*	*73,401*	*—15,546*	*—536*	*—16,082*
Contiguous Districts	*42,707*	*67,809*	*56,945*	*68,892*	*— 13,238*	*— 1,092*	*— 14,330*
Ahmedabad	6,394	12,093	29,142	27,291	—22,748	—15,198	—37,946
Kaira	13.858	23.567	7,243	15,943	+ 6,615	+ 7,624	+14,239
Panch Mahals	2,285	3,568	2,939	3,078	— 654	+ 490	— 164
Surat	15,017	19,977	10,750	12,892	+ 4,267	+ 7,085	+11,352
Broach	4,569	7,433	5,535	8,588	— 966	— 1,155	— 2,121
Khandesh West	1,185	861	1,223	951	— 38	— 90	— 128
Nasik	399	301	113	149	+ 286	+ 152	+ 438
Non-contiguous Districts	*5,599*	*4,743*	*8,337*	*4,481*	*— 2,738*	*+ 262*	*— 2,476*
Thana	89	286	949	664	— 860	— 378	— 1,238
Colaba	519	289	172	76	+ 347	+ 213	+ 560
Ratnagiri	1,208	923	42	23	+ 1,166	+ 900	+ 2,066
Khandesh East	..	..	36	37	— 36	— 37	— 73
Kanara	14	1	3	2	+ 11	— 1	+ 10
Bombay City (including Suburban District)	1,826	1,874	6,563	3,194	— 4,737	— 1,320	— 6,057
Ahmednagar	247	215	46	38	+ 201	+ 177	+ 378
Poona	795	674	310	259	+ 485	+ 415	+ 900
Sholapur	121	75	55	96	+ 66	— 21	+ 45
Satara	700	339	78	49	+ 622	+ 290	+ 912
Belgaum	61	54	36	10	+ 25	+ 44	+ 69
Dharwar	14	6	37	27	— 23	— 21	— 44
Bijapur	5	7	10	6	— 5	+ 1	— 4
Sind	*585*	*322*	*155*	*28*	*+ 430*	*+ 294*	*+ 724*
Bombay States...	*34,220*	*53,596*	*28,078*	*48,365*	*+ 6,142*	*+ 5,231*	*+11,373*
Contiguous	*33,732*	*53,309*	*27,939*	*48,234*	*+ 5,793*	*+ 5,075*	*+ 10,868*
Cambay	881	1,722	958	1,546	— 77	+ 176	+ 99
Cutch	708	689	84	65	+ 624	+ 624	+ 1,248
Kathiawad	19,509	27,876	8,391	12,649	+ 11,118	+ 15,227	+ 26,345
(*a*) Bhavnagar	4,017	7,145	1,617	3,191	+ 2,400	+ 3,954	+ 6,354
(*b*) Gondal	..	..	508	642	— 508	— 642	— 1,150
(*c*) Nawanagar	1,234	1,774	537	704	+ 697	+ 1,070	+ 1,767
(*d*) Junagadh	1,646	3,449	2,101	1,985	— 455	+ 1,464	+ 1,009
(*e*) Rest of Kathiawad	12,612	15,508	3,728	6,127	+ 9,884	+ 9,381	+ 19,265
Palanpur Agency	4,502	7,846	4.774	6,088	— 272	+ 1,758	+ 1,486
(*a*) Palanpur State	3,791	6,485	2,628	3,496	+ 1,163	+ 2,989	+ 4,152
(*b*) Rest of the Agency	711	1,361	2,146	2,592	— 1,435	— 1,231	— 2,666
Mahikantha	2,727	7,165	4.364	13,937	— 1,637	— 6,772	— 8,409
(*a*) Idar	470	978	870	1,875	— 400	— 897	— 1,297
(*b*) Rest of the Agency	2,257	6,187	3,494	12,062	— 1,237	— 5,875	— 7,112
Rewakantha	4,195	6,568	7.678	11,813	— 3,483	— 5,245	— 8,728
(*a*) Rajp pla	918	1,419	2.795	4,325	— 1,877	— 2,906	— 4,783
(*b*) Restiof the Agency	3,277	5,149	4,883	7,488	— 1,606	— 2,239	— 3,845
Surat Agency	1,210	1,443	1,690	2,136	— 480	— 693	— 1,173
Non-contiguous	*488*	*287*	*13*	*131*	*+ 349*	*+ 156*	*+ 505*
Bhor	2	1	14	17	— 12	— 16	— 28
Sawantwadi	7	8	15	13	— 8	— 5	— 13
Kolhapur	169	94	31	40	+ 138	+ 54	+ 192
Southern Maratha Country States ..	61	27	33	28	+ 28	— 1	+ 27
(*a*) Sangli	..	..	21	17	— 21	— 17	— 38
(*b*) Other States	61	27	12	11	+ 49	+ 16	+ 65
Other States in the Presidency proper ..	249	157	46	33	+ 203	+ 124	+ 327
Bombay Unspecified	*2,373*	*2,886*	...	...	*+ 2,373*	*+ 2,886*	*+ 5,259*

* These figures are exclusive of emigrants of Aden.

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CHAPTER IV

RELIGION

STATISTICAL DATA

Subject	TABLES		
	Imperial	State	Subsidiary
Towns arranged territorially with population by Religion	V	....	....
Religion by Administrative Divisions	VI	....	....
Christians by Sect and Race	XV	....	....
Europeans and Anglo-Indians by Race and Age	XVI	....	....
Religion by Talukas	....	IV	....
Sects by Divisions	....	V	....
General Distribution of population by Religion	....	....	I
Christians, Number and Variation	....	....	II
Religion of Urban and Rural Population	....	....	III
Classification of Hindu Sects	....	....	IV

140. **Reference to Statistics**—Having considered the distribution of the population into town and country and its classification according to its birth-place we come in this chapter to another important differentiation—the distribution of the inhabitants according to their religious beliefs. The statistical material round which this chapter is written is somewhat less ample than that dealt with in the preceding chapters. Imperial Table VI gives the religious distribution of the people of the State by Administrative Divisions. The analysis is carried further into Talukas in State Table IV. In State Table V, the classification of the main religions into their sects and subsects is shewn. Imperial Table XV gives the sects of Christians. In Imperial Table V, the population of towns is classified by religion. There are several other tables with which this chapter is not immediately concerned, wherein the distinction by religion is correlated with other data such as age and civil condition, education, caste, and occupation.* State Table II given at the end of the Imperial Tables Volume gives the taluka figures for religion, along with statistics regarding education by age-periods. Subsidiary Tables I, II and III have been prepared from Imperial Tables VI, XV and V respectively. Subsidiary Table IV is prepared from State Table V.

141. **Scope of the Chapter**—Before the discussion of the figures is proceeded with some preliminary observations are necessary to explain the scope of this chapter. In the last Report and in Baroda State Reports generally of previous years, the writers had taken advantage apparently of the scantiness of their statistical material to enter into a general discussion of religious tenets and ceremonial observances. Since 1911, nothing has happened to disturb the broad

* The value of the classification of these data by religions will be discussed in the chapters more immediately concerned with them. Generally it may be stated here that the religious differentiation is so broad that the data prepared on that basis are the resultant of a wide range corresponding to the sharp contrasts in the social strata comprised in each religion. The variations by social strata are the divisions of real significance, and not differences by religion. But any scientific compilation of statistics on the basis of differentiation by social strata is met at the outset by the difficulty that there is no readily intelligible test which can be of general application to India and by which such differences can be appraised and distinguished. Any social classification on a provincial basis, *e.g.*, Gujaratis, Deccanis, etc., although now tabooed in the Census Code, is however more satisfactory and of more practical use than the religious basis. But even the provincial distinction has its disadvantages as it does not take sufficient count of the social and economic differences within the provincial group itself.

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currents of religious life in this country and any further discussion of questions of doctrine will therefore be in the nature of a repetition except where any new matter is sought to be embodied. For this reason, we shall concern ourselves mainly with the numbers of those who profess certain religions, but in order to analyse the significance of the variations, the meaning of the terms denoting the religions will have to be briefly discussed in order to judge the relative accuracy of the figures and to find out whether any difficulty was experienced in drawing any line of distinction between religions whose border lines shade into one another. In this State, the option was again taken in this census as at the censuses of 1911 and 1901 of recording figures for sects of all religions. These sect statistics will therefore be analysed and their reliability considered. In connection with these sects, a new principle of division will be discussed and justified by a brief survey of the interrelations of Hindu sects. Opportunity will also be taken to describe sects that have not appeared before. From the consideration of these sects, we shall then proceed to give a brief description of the religious organisation at present obtaining in the City of Baroda. The chapter will be finally concluded with a note on the modern influences that are shaping the different religions and their relations *inter se*.

142. Main Figures of Religious Distribution—The main figures had better be given at once. In the margin the absolute as well as the proportionate strength of the different religions is noted. Hinduism dominates the figures in this census as it has always done in the previous enumerations. Claiming as it does 819 persons out of a thousand of the total population as its adherents, it outdistances all the other religions. Animism claims the next highest figure with 77 per 1000. Musalmans have almost the same strength as Animists. Jains are only about one-fourth of the followers of Islam. Parsis and Christians are about equal in numbers. Of the other religions, there are 645 Hindu Aryas; Sikhs total 70; Brahmos and Jews are 35 and 27 respectively. Atheists number 5 and Buddhism is represented by a single person.

Religion	Number in 1921	Proportion per 10,000 in 1921
Indo Aryan—		
Hindu ..	1,742,160	8,193
Jain ..	43,223	203
Hindu Arya ..	645	4
" Brahmo	35	
Sikh ..	70	
Buddhist ..	1	
Primitive—		
Animist ..	163,077	767
Eranian—		
Parsi ..	7,530	35
Semitic—		
Musalman ..	162,328	763
Christian ..	7,421	35
Jew ..	27	....
Indefinite Belief—		
Atheist ..	5	....

Out of a total of 262 persons to the square mile, 214 are Hindus, 20 belong to Islam, 20 are aboriginals still in the domain of primitive religion, 5 are Jains and the remaining three belong, one each, to Parsi, Christian and other pursuasions.

The marginal table also attempts to classify them according to the broad groups of religions. The Indo Aryan Religion claims 840 per mille of the total population. The Semitic forms of belief are represented by 80 per mille. Primitive religion counts for 76 persons in a thousand while the religion of Iran has only 4 to the same number.

143. Local Distribution of Religions—A general diagram is given in the margin which shows the proportionate strength of the different religions in each Natural Division. Hinduism is at its strongest both in numbers and in proportional strength in North Gujarat, which is also the stronghold of Jainism. Islam musters its largest numbers in Central Gujarat, particularly in the capital of whose population it forms 16 per cent. Animism is most in evidence in South Gujarat particularly in the Rani Area. In Central Gujarat, it is confined almost entirely to the Chorashi tract. Christianity claims its largest number of converts in Central Gujarat, particularly in Charotar, Vakal and Chorashi areas. Parsis are mostly in South Gujarat. The strength of the Arya and Brahmo Samajes is in Central Gujarat, the Brahmos being mostly found in the Capital. Almost all Jews are resident in the City, which also contains the solitary Buddhist. The Atheists are from Mehsana to wn.

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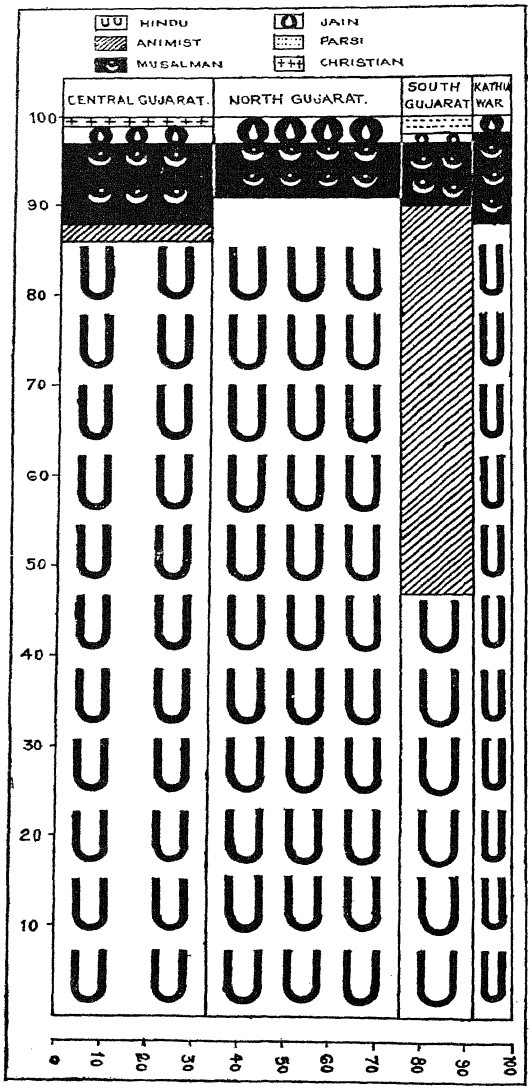
Hindus number 869 per mille of the total population of the Central Division without the City. In the City the presence of large numbers of Musalmans bring the Hindu ratios down to 794. In North Gujarat, 909 in a thousand are Hindus. In South Gujarat, the Hindu proportion dwindles to only 471 or less than half, because of the large number of Animist tribes. In Semi-Rasti and Rani Areas of this division, only160 per mille are Hindus. In the Kathiawad, the prevalence of Hinduism is indicated by the ratio of 875 to the thousand.



Of the Musalmans, 66, 136, or even 40 per cent are found in Central Gujarat and 34 per cent. reside in the Northern Division. The largest proportion of the population that is Musalman in any one *prant* is seen in Okhamandal where 213 out of a thousand follow this faith.

Over 90 per cent. of theAnimists are in South Gujarat, the remainder is almost entirely confined to the Chorashi part of Central Gujarat. Animists are scarcely to be met with elsewhere.

Of a hundred Jains, 62 are in the Northern Division; 25 are in Central Gujarat including the City; and the rest are divided fairly evenly between the other two divisions.

144. Meaning of the figures—It is necessary to understand what exactly these figures mean. Since 1911, there has been no change in the signification of the terms denoting the religions. In the instructions to the enumerators they were strictly enjoined generally to enter without question whatever religion to which a person claimed to belong. One exception was made in 1911 in regard to the forest tribes, and the vernacular instructions in regard thereto have been continued in this census also. The enumerator was instructed in the last two censuses to enter the name of the tribe in the column of religion where the individual members of such aboriginal tribe did not return Hinduism, Islam or any other recognised faith. But where any member of these tribes de ired to enter any such religion, the

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enumerator was to enquire whether he really professed it or, in other words, to use his discretion in the matter. The defect of this procedure is that it left too much discretion to the enumerator without giving him definite tests to go upon. As a result there was a good deal of divergence in practice.

145. Animism and Hinduism—Animism is only a convenient term to denote all that residuum of belief which is not known as Hinduism, Islam, Christianity or any other recognised religion. The tribes themselves do not call their religion by any such names or any one name. That is why the enumerator was asked to enter the name of tribe in lieu of religion; and in the Tabulation Office, all such cases were sorted and totalled under the head of Animism. But one of the commonest of census errors is the confusion of tribe or caste with sect names. Even educated Hindus, when asked about their sect, are more apt to state their caste than their sect. With aboriginal tribes, their tribal names are more familiar to them than even their rude divinities; and when asked about their religion, they would more often than not state their tribal name, and the enumerator without bothering to enquire would simply enter what was stated. In this way the true extent of Hinduisation amongst them may be obscured. On the other hand, there is the bias of the Hindu enumerator, especially if he is called upon, as laid down in the instructions to exercise his discretion; and in this event, he is more likely to enter every likely aboriginal, except the wildest, as Hindu. In the last two censuses both these tendencies have been at work. The variations seem so arbitrary that they cannot be ascribed to any other reason but the vagaries of the enumerators. Figures regarding the variation in the total strength of forest tribes (both Hindu and Animist) are reliable enough but the separate figures for each of these sections are inaccurate, as will appear evident from the marginal table. The total strength of the tribes has increased by 4.7 per cent, the Animist section has increased by a much higher rate or 41 per cent and the Hindus among them seem to have declined by nearly 38 per cent., so that, if these figures are to be believed one would have to suppose a general relapse back to Animism to have taken place in the decade. But as a matter of fact nothing of the kind seems to have happened. On the other hand the tendency should be, with the spread of Gujarati influence, increasingly towards Hinduisation.

Number of forest tribes who are	1921	1911	Variation per cent
Hindu	95,370	131,515*	—37·9
Animist	163,077	115,411	+41·3
Total ..	258,447	246,926	+4·7

Naya Kaka Panth

146. Hinduism and Islam—Similar difficulties exist, but to a much smaller extent, about drawing a line between Hinduism and Islam. The latter faith is indeed a *Kitabi* religion, and has the advantage of having a clear cut formulary of belief. But still even here, the chances of confusion exist. The interaction of Islam and Hinduism in Gujarat has led to the development of what corresponds to the Guru-worshipping cults of the latter religion. The followers of the Pirana saint Imam Shah, and of Nayakaka *panth* are examples of this mixture of Hindu and Muslim practices. Momnas, Shekhdas and Matia Kanbis are the chief classes among which a combination of Islamic and Hindu rituals are observable. Since 1901, they have been variously returning themselves, according to the influences of their environment. The general tendency seems from the marginal table to be in the direction of reversion towards Hinduism. But I doubt whether these figures can be accepted as correct. The Bhabharam and Nayakaka sectaries are generally Hindus. All have been so returned but some of the Garasia followers of these sects must be Musalmans. The Caste Table (Imperial Table XIII) also shows 274 Momnas and 48 Shaikhs as Hindus, but I doubt whether any Momnas and Shaikhs are properly returnable as Hindus. The influence of the Ramanandi Sadhu, Nirmaldas, who taught the Matia Kanbis in 1880 to give up calling themselves Musalmans has to be given

Worshippers of Musalman Pirs returned as	1921	1911	1901
Hindus	8,015	5,714	....
Musalmans ..	2,001	2,102	3,655
Total ..	10,016	7,816	3,655

* The figure as shewn here is the corrected figure as compiled from Imperial Table XIII of 1911. The title page of Imperial Table VI of that year gives a wrong figure, 85,566.

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due weight, but on the other hand, the Navsari *dargah* of this *panth* has acquired a large influence and its annual *uras* or Saint's day festival attracts a large number of people. It is possible therefore that the number of persons shewn as Musalmans amongst the Piranapanthis is an underestimate. On the other hand many Islamic followers of these *panths* must have returned themselves under the orthodox Sunni folds.

147. **Hinduism and other Religions**—Some difficulty is experienced in other parts of India in distinguishing Jains from Hindus. It has been stated that the Jains have shewn an increasing tendency to call themselves Hindus. This statement will be examined in a later section of this chapter. In the meanwhile the reader may be assured that no difficulty was felt in this State in this matter. Here we had a census of sects, and even though there were occasionally Jains who called themselves Hindus, they were always careful to add *Sravak* or Jain as a qualifying word. Thus there was no difficulty in the slip-copying. All such cases were taken as Jains. No case has however come to my notice of any Jain's wishing to conceal his religion in the census schedules. The Christians and Parsis gave little difficulty. Occasionally there was an attempt on the part of some Hindu enumerator or Supervisor to return the Christian converts as "Dheds" or even as "Ramanandi Vaishnavas". One or two cases came to my notice while examining the preliminary record of Petlad and Bhadran talukas. These were of course enquired into and corrected. But on the other hand, the converts themselves were supplied with printed slips containing the name of their sect from the different missionary organisations working in the State, so that, when the enumerator came to them, they could enter the correct entries for Christian sects in the schedules. As will be shewn later, the Christian figures are fairly accurate.

148. **Definition of Hinduism : Who is a Hindu?**—The main reason for all these uncertainties is the vagueness of the term "Hindu". In the Census of 1911, certain tests were laid down whereby, it was thought, the extent of genuine Hinduism could be gauged. These tests were based upon the fact that Hinduism was not only a religion, but a "dharma"—something which is of much wider content than belief—comprising within its folds not only a congeries of creeds and ceremonials, but also certain fairly definite ideas of social organisation.

The subject is too large indeed to fall within the scope of a Census Report, but at any rate the remarks of Mr. N. S. Iyer in the Travancore Census Report of 1911 are pertinent in this connection and deserve to be quoted. The Census Commissioner for 1911 laid down certain tests which are summarised in the margin whereby certain castes and tribes who do not conform to these tests and are yet returned as Hindus, may be ascertained to be outside the pale of genuine Hinduism. Mr. Iyer, taking these tests, declares that the profession of Hinduism does not hinge on them :—

Suggested Tests for castes whose claim to Hinduism is doubtful—

(1) Deny the supremacy of the Brahmans. This category includes two distinct groups :—
  (*a*) certain sectarian groups which owe their origin to a revolt against the Brahmanical supremacy ; and
  (*b*) the aboriginal tribes and also certain low castes who, being denied the ministrations of Brahmans, retaliate by professing to reject the Brahmans ;
(2) do not receive the *mantra* from a Brahman or other recognized Hindu Guru ;
(3) deny the authority of the Vedas ;
(4) are not served by good Brahmans as family priests ;
(5) have no Brahman priests at all ;
(6) are denied access to the interior of ordinary Hindu temples ;
(7) cause pollution :—(*a*) by touch, (*b*) within a certain distance ;
(8) bury their dead ; and
(9) eat beef and do not reverence the cow.

> "To take what is considered by foreign writers, as the keynote of the social edifice of ancient India, it is the acknowledgment of the supremacy of the Brahmans. But, in the constitution of Indian society where all have their appointed duties (dharmas) to each other, the question of superiority cannot arise. If such a claim has cropped up, it is a sign of disorganisation and decay. Again, with the Brahman as representing the religious organ in the body-politic, his non-ministration to the other castes is only a disordered state and does not take away the title to be so ministered to, still less cast them out of the socio-religious organisation. As for gods—there is only one God in the sense of ultimate cause, or God of absolutism as he is called, and all the rest are powers of various degrees of influences over the world's affairs. The Indian negotiates with all of them. But some are partial to a few, whom alone they may have got to know and learnt to believe in. But this cannot affect the question of their adherence to the main religion.

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Again, in regard to the authority of the Vedas, it may be observed that in a society where, as a matter of fact, the study of the Vedas is limited to the section whose function is defined to be spiritual ministration to the entire community, the Vedas do not come into direct contact with the mass of the people: and if they have in course of time ceased to think of it, it is no more than a passenger in a ship, believing or disbelieving in the existence or value of particular portions of the machinery, however vital, and cannot affect the fact of his being borne by it.

Nor are temple worship and access to temples criteria of Hinduism. Castes that do not enter, worship from outside, and among them are devotees no less earnest and attached. Pollution again is more an observance than an essential of religion. A Brahman, it is said, should not touch another Brahman, if he wishes to be ceremonially pure. It is in connection with ritualistic convention that this question of purity and pollution comes in. Further, a caste is polluting with reference to another caste and not with reference to its claim to be classed as a Hindu."

The above observations indicate what may be taken to be the considered Indian opinion in regard to the tests then laid down.

149. Suggested tests for Hinduism—The point about these tests is that some are far too definite to serve as useful criteria (*e.g.* 1, 2, 4-7) and others are non-essentials very limited in their application (*e.g.* 8 and 9). Thus, a general respect for personality and priestly authority is indeed a distinctive mark of Hinduism. Some castes may retaliate against the Brahman for his arrogant claims, and yet retain this respect for their *gurus* and other holy men. The denial of caste-system which such an attitude towards the Brahman would seem to imply should also not involve any exclusion from the Hindu name. The conception of a social order based on differentiation of functions—of a scheme of things wherein all have their appointed duties—is indeed one of the most dominating notes in Hinduism. If out of this idea has sprung the claim of the Brahman to social ascendancy, it is as Mr. Iyer rightly points out "a sign of disorganisation and decay." Any genuine movement arising out of Hinduism that has for its object the eradication of this evil cannot therefore be considered un-Hindu. The tests one thinks of as alternatives have to be therefore more comprehensively worded. The first of these is this conception of society as an organisation of duties, based primarily, one would think, on difference in human temperaments. The second group of characteristics refers to the reverence paid to priests. They need not always be Brahmans. *Gurus*, *mahants* and holy men generally, exact respect from all kinds of Hindus whether they are high or low. The third group of ideas that are typical of Hinduism is embedded in such doctrines as *Karma* (action or conduct), *Samsar* (wandering) and *Moksha* (release) influencing all ranks of society. Fourthly, of peculiar importance is the worship of *pitris* (ancestors) as forming an important element in the every day life and worship of Hindus. Fifthly, the acceptance of the Brahmanical scriptures—not Vedas alone—may fitly form one of the essential requirements in Hinduism. And lastly, in and through these all, there is the permeation of a deeply personal system of worship based essentially on the belief in one God manifesting Himself in powers of various degrees of influence and goodness, which take shape in anthropomorphic deities who hold the faith of their adherents through fear, necessity or otherwise.

150. Animism and Anthropomorphism—On these general lines, even the aboriginal, who claims to be a Hindu, comes within the category of genuine Hinduism. It is not true to say that there is no dividing line, however faint, between Animism so called and Hinduism. Just as Buddhism has its intermediate faiths, which lie on the border land between it and Shamanism, just as even Christianity has its Abysinnian Church which negotiates with a polydaimonistic ritual, so also has Hinduism in its contact with primitive forms of belief made compromises by elevating some of their deities into its own Pantheon and giving rise to sects which are little removed from Animism. It is because this border-line is too faint sometimes to be distinguished that a heroic expedient has been suggested to include Animism under Hinduism. But such an inclusion will mean the wiping away of the real distinction that exists between Anthropomorphism and Animism. The personal character of all Hindu worship, of which we have made mention above, lends a kind of anthropomorphic tinge to the greater part of what is known as popular Hinduism. Now the anthropomorphic process as apart from the purely Animist attitude consists in the worship of inanimate objects as representatives, symbols or reflections of the deity. The Animist worships these objects themselves as gods. The difficulty of such a distinction is that the enumerator does not understand it and as a consequence figures regarding Animists are largely conjectural. In the second place, it is difficult to state exactly whether Animism of the unalloyed type described above exists amongst the aborigines of today. The greater deities worshipped by these tribes are the *Gohamaya Madi*, the *Devli Madi*, the *Vihamaya Madi*, the *Kavadia Dev* and the *Kaloka Kad*. The first three are female deities and their sex seems to indicate that worship of purely inanimate nature has given place to Anthropomorphism. In addition the preponderance in aboriginal worship of the female principle, as shewn in these and other Mātās like the Khodiyar Mātā of the Bhils, the Māri Mata and the Kālka Mātā of the Dublas and the Bhavāni of the Dhodias and Nayakdas are traces of a primitive, perhaps matriarchal, social organisation which existed long before Vedic Aryanism. But inspite of these excrescences, the main trunk of aboriginal belief is Animistic in character. The

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worship of the *magar* (alligator) and the *vagh* (tiger), so largely prevalent amongst these aborigines, is reminiscent of this Animistic religious attitude. The border-line between Hinduism and primitive belief may be somewhat hard to draw, but the real distinction between the two is seen in the characteristic attitude of each towards the deities which one worships and the other has absorbed. Some of the mother-deities of the aboriginals now form part of the Sākta ritual, but the characteristic attitude of the Hindu Sākta is wholly different, and it is a complete misreading of Hinduism to regard it, as some have done, as magic tempered by Metaphysics or Animism veneered with philosophy. Lastly it is stated that because the aboriginal has some conception of one God, he should be considered as part of Hinduism. It is true that some dim notion of a supreme spirit—called *Bapji*—persists among some of these tribes ; but that is no reason why the whole group should be regarded as Hindus. A similar argument would club Christians and Musalmans together as one religion, because they worship one and the same God. The point is, a great part of the aboriginal population does not worship the distinctively Hindu gods, nor does their ceremonial bear the remotest resemblance to the distinctive Hindu worship.

There is a real distinction then which has to be brought out. The great difficulty however is the statistical difficulty. There is no denying the fact that Hinduisation has become an increasingly powerful factor amongst the forest tribes. But it is very hard to estimate the extent of its prevalence. The worship of Hanuman amongst Dhodias, the worship of Mahadeva and Hanuman amongst Dublas and the worship of Ram and Durga amongst Chodhras are instances of this Hinduising tendency. But on the other hand, even amongst the Hinduised sections like the Chodhras, the entire want of caste-organisation shows how Hinduism in its most distinctive social side still sits lightly upon them. Amongst the Dublas, the Hindu influence is stronger; partly because as *Halis* or indentured servants they come into closer connection with Anavalas, Kanbis and other better classes of cultivators than the other aborigines and partly because they treat the Brahman with respect and even utilise them on occasions. The Talavias and Tadvis who are sub-castes from the Dublas and Bhils by fission are also completely Hinduised; particularly because they never intermarry with the members of the parent-stock and sometimes lay claim to Rajput origin. The Dhodias, Bhils and Vasawas show little Hinduisation on the other hand.

151. Suggested tests for distinguishing Animists from Hindus—On the whole the conclusion seems to be that there are undoubted Hindus amongst the aboriginal tribes,that their figures are increasing but that their strength cannot be estimated properly from census figures, which have been already shewn to be unreliable. Some tests may however be indicated whereby the increasing prevalence of Hinduism may be seen. One test of this process is as hinted above shown by the claim to Rajput descent. As soon as a tribe has become sufficiently Hinduised, its first attempt to raise itself in the social scale is to trace its affinities to that race. Another more obvious test is the abandonment of their tribal language. The greater the prevalence of Hinduism in a tribe, the more extensive is their employment of some such Aryan tongue as Gujārati and Marathi for their ordinary use. There are one or two reservations however which must be noted. The Bavchas, a completely Hinduised tribe, still cling tenaciously to their particular dialect. So do the Chodhras. But generally however, the spread of Hinduism accompanies the advance of Aryan tongues into the Bhil country.

152. True strength of Animists estimated—The second of these tests is the more satisfactory, and by its aid we shall attempt to find out the strength of the Animists in 1911, and the variation since then. Comparison on this basis cannot be carried earlier than 1901, because the total strength of these tribes (both Animistic and Hindu) is not available for any preceding census year. A comparative table is given showing the total strength of each main tribe, and the numbers speaking the tribal dialect. The detailed figures are given in Subsidiary Table III to Chapter IX. If we take the language as a correct test, then the number of Animists will be identical with that of Bhili dialect speakers, which is 145,780. But there are reservations as already pointed out. The case of Bavchas and Chodhras have been already cited. Of the latter, the Chokapuri section which shows the most evident Rajput strain, is undoubtedly completely Hinduised. They numbered 8,572 or 27 per cent. of the total strength of Chodhras in 1911. The sub-castes are not recorded in this census but on this proportion, there are roughly 9,000 Chokapuris now. All Dublas, Bavchas,

Name of tribe	Total strength	No. speaking Bhil dialect	No. shewn as Animist
Bhil	43,667	24,727	20.098
Chodhra ..	32,841	30,656	31.526
Dhodia	21,341	19,051	19,829
Dubla	31,307	421	8,057
Dhanka ..	7.610	....	1.321
Gamit	51,974	51,587	51,599
Nayakda ..	8,672	4,557	7,903
Tadvi	14,156	....	....
Talavia ..	20,527	....	1,507
Vasawa.. ..	13,610	5,358	11,373

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Talavias, Dhankas, Mavchis and Tadvis are similarly Hindus. In regard to the other tribes, language may be taken as the determining test between Hinduism and Animism. In 1891, Mr. Dalal took the whole Koli population amongst those whose Hinduism he considered doubtful. There are, it is true, varying opinions about them—some speak of them as "the aboriginals of the plain or civilised Bhils"; others see in them little difference from the Rajputs. But there is no doubt as to their Hinduism. They worship all the recognised Hindu gods, although some aboriginal *mātās*—particularly *Khodiyar*, *Verai* and *Meldi*—claim their adherence also. They have even been influenced by that puritan form of Vaishnavism, which is known as the Swaminarayan Sect. Finally good Brahmans of the Audich and Srimali sections minister to them as priests. There is no reason therefore to consider them as Animists.

Calculating on the above basis, we get the results as shewn in the marginal statement. These figures may be compared with those given in the marginal table in para 145 above. If our assumptions are correct,—and we venture to present them to the reader as being more correct than the census figures—then the Animists seem to have declined by 2·3 per cent. The census figures show an increase of 41·3 per cent. which is wholly fictitious. In 1911, the census total of Animists was about 19 per cent. below the truth, while in 1921, the census figures were an overestimate by about 18 per cent.

True religious distribution of forest tribes estimated

Year	Total	Hindu	Animist
1911 ..	246,929	104,685*	142,241
1921 ..	258,447	119,935	138,512

* Excluding 3 Aryas.

153. Variation amongst Hindus—Apart from the forest tribes, the only other section whose Hinduism is a matter of controversy is the group of castes who are untouchables or are nearly so. The case of Kolis has been already considered. The groups which are just below them but are still within the pale of social communion like the Vaghris, Bajanias, Saranias and Ravalias have a strongly Animistic side to their worship. These four castes number 57,628 in this census. They are very low type Hindus and have no use for Brahmans. They lay some shadowy claim—the Ravalias rather more justly than the others—to a Rajput strain, but their degraded living must have brought them very near to the animistic religious attitude. Ranking lower than these, but rather superior in their Hinduism is the so-called untouchable group. The marginal table gives the comparative strength of these castes for the last two censuses. With Dheds, Garodas, Chamars and Mahars, the influence of modern ideas is fast destroying the old taint of untouchability; Bhangis are still "untouched", because of their calling, but on the whole the treatment meted out to them is rather kindlier, perhaps by way of making a virtue of necessity. Hinduisation is complete amongst these Dheds, Mahars, Chamars and Garodas (who are their priests). They worship Hanuman, Ganpati and also inevitable *Mātā*. Their caste-organisation is completely of the average Hindu type. The practice of burying their dead has been given up by the better class amongst them. They pay much court to priests and *mahants*, and latterly *mahants* of the Kabirpanth have acquired great hold over them. The attitude of Brahmans towards them has no doubt led to their present sullen hostility towards these. Although the census does not show it, I am given to understand that some of the local educated Dheds and Mahars have shewn leanings towards the so-called Satya Sodhak Panth—an anti-Brahman movement originating in the Deccan. The Shenvas, Bhangis, Turis and Mangs are very degraded type—although the Gujarat Bhangi is somewhat more Hinduised than his brother in Upper India. There is little trace of the so-called "Lal begi" religion amongst them. They worship *Hanuman*, *Meldi Mātā*, *Sikotri* and the basil plant. Quite a few are attracted to Kabirpanth or Ramanandi Vaishnavism. On the whole I would class

Comparative strength of Untouchables in 1911 and 1921

Name of Caste	Number in 1911	Number in 1921
Bhangi	26,397	27,548
Dhed	99,798	99,546
Garoda	6,281	6,570
Chamar ..	32,210	35,147
Shenva	7,587	6,072
Mahar	701	586
Mang	122	34
Burud	150	159
Holar	51	2
Vansfoda ..	9	19
Turi	1,048	1,138
Thori	49	....
Total ..	174,403	176,821

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these castes amongst the untouchables, and the Vaghris, Rawalias, and others as Animistic Hindus, just as the Hindu section of the forest tribes, estimated above may be called Hinduised Animists.

Excluding these categories, we have the residuum who may be said to conform in the bulk of their religious and social practices to the standard Hinduism of the Brahmanical scriptures. In the marginal table are given figures to show the variation in what may be called standard Hinduism since 1901. These figures are further compared with those relating to what we have designated Animistic Hindus and Hinduised Animists. Standard Hinduism seems to have increased only by 1·5 per cent in 1911 and by 5·2 per cent. in the next decade. The census increase amongst persons returned as Hindus in 1911 was as high as 9·7 per cent. This is due in a large measure to the inclusion in that census amongst Hindus of Hinduised Animists, whose real strength was in that census very largely overestimated. In 1901, on the other hand, only 14,212 persons from Animistic tribes (12,551 Talavias and 1,661 Bavchas) were returned as Hindus, while their true strength as appears from the above table was much larger. But the figure shewn above—119,353—is not also strictly accurate. It is based largely on the returns of dialects which do not seem to have been correctly compiled in 1901, as pointed out in para 431 of Mr. Govindbhai's report. I am inclined to place the strength of Hinduised aborigines in 1901 at rather less than 100,000. The total strength of the tribes however showed an increase of over 29 per cent. in 1911. The estimate of Hindu Animists for 1911, as given in the above table, may be accepted as fairly correct. The 1901 figures must be therefore correspondingly reduced to make the rate of variation for this class at least as great as that of the whole tribal population. The increase amongst real Hindus since 1911 is 5·2 per cent. which is rather larger than the rate of variation in the general population. This increase is mostly due to the joint operation of migration and natural increase. Apart from Animist tribes, there is little chance of accession of converts from other religions. The case of Piranapanthis is too small to affect the general rate of variation amongst Hindus at any rate. The Animistic Hindu section consisting mostly of low type castes is prolific ; and inspite of their high death rate, the increase amongst them is always relatively large compared to the rest of the community. As pointed out in the discussion on movement of population in Chapter I, it is only backward tracts that show a distinct rebound after a famine. Similarly it is only amongst the very low strata of society that such a rebound takes effect without any retardation. That is why these classes of Hindus showed 14 per cent. increase in 1911. In 1921, the variation slowed down to only 4·1 per cent.

Year	Hindus who conform to standard tests		Animistic Hindus		Hinduised Animists	
	Number	Variation	Number	Variation	Number	Variation
1901 ..	1,454,857	....	77,867	..	119,353	..
1911 ..	1,476,706	+1.5	88,925	+14.2	104,685	—12.3
1921 ..	1,554,190	+5.2	92,600	+4.1	119,935	+14.5

154. Variation amongst Musalmans—In the above discussion, it will be seen that the census returns of Hindus and Animists have been rejected and the true variation in these two religions has been sought from independent sources. In regard to other religions, however, the census figures may be accepted as fairly reliable. The margin shows the variation in absolute figures amongst Musalmans since 1901. Its proportionate strength for the last three censuses is also shewn in that table. Between 1901 to 1911 the greatest rate of decrease amongst Musalmans was registered in South Gujarat. This decrease was rightly put down to emigration in the Census Report of 1911. But as mentioned already the contact of Islam with Hinduism has produced intermediate sects the votaries of which returned themselves either as Hindus or Musalmans according to their choice. It will be useful to compare the variation amongst Musalmans without this disturbing factor. Without the Pirana sectaries, the Musalmans numbered 161,359 in 1901. In 1911, the corresponding figure was 158,785. Thus there was a decrease of 1·5 per cent. In 1921, on the other hand, the Musalmans numbered, without these Neo-Moslems, 160,327, thus showing an increase of hardly one per

Year	Musalmans		
	Number	Variation per cent	Proportionate strength per 10,000
1901 ..	165,014	....	845
1911 ..	160,887	-2·5	791
1921 ..	162,328	+1	763

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cent. Taking the census figures of Musalmans as a whole, the increase since 1911 is the resultant of many divergent ratios of which the increase of 4·1 per cent. in North Gujarat and the decrease of 12 per cent. in the City are the two opposite extremes. The Musalman population in the Capital appears to be rapidly declining since 1891. It cannot be that this decline is due to any excessive proneness of this community to high mortality. As will be shown in the next chapter, the death rate amongst Musalmans both in normal as well as in epidemic years is much lower than that of Hindus. The reason must be sought therefore in the continual drain on this community through emigration. The Musalmans aged 15-40 numbered 69,340 in 1911. In this census their strength decreased to 63,703 or by 8·1 per cent. A serious depletion of the able bodied persons amongst them seems to have taken place in the decade through the joint influence of epidemics of influenza and plague on the one hand and of emigration on the other. A large portion of the Musalman community consists of traders ; and these have always sought their fortunes elsewhere. Vohoras feature largely in overseas emigration. Conversion, I have little doubt, plays a very small part in affecting the strength of Gujarat Musalmans.

155. Variation amongst Jains—As the reader has already been assured, no supposition need be made that the variation amongst Jains at least in this State is due to any extent to the desire amongst certain sections of this community to pass themselves as Hindus. There is naturally a desire amongst all Jains as amongst all other adherents of Indo-Aryan Religions to adopt the Hindu name as a racial signification expressive of their national unity. Beyond this there is also the fact that the Jains are a distinctively commercial community and wishing to live in unity with their Hindu neighbours they have adopted a good many of the social observances of Hinduism and have not even hesitated to enter into marriage relations with the Hindu section of their corresponding castes. This circumstance is not enough however for us to build on it any theory that there is in existence a definite tendency to wilful falsification of census returns. The latest census shows that though there is a decline since 1911 ; the rate of decrease in the latest decade is much less than that in the one previous. The greatest decrease in the State has occurred in South Gujarat. There the Jains have declined from 2,772 to 2,422. The Census Report of 1911 mentioned that the increase in Gandevi town was due to the accident of a Jain religious gathering being held there on Census day, which attracted numerous Jains from neighbouring villages. Possibly they may have come from neighbouring British villages. The census figures of 1921 therefore may represent the normal situation. Usually, however, the Jains, whenever they are old enough to earn their livelihood, emigrate to other places, Bombay City particularly. Some go even beyond to Europe and America. A few Jain Vanias are found in Paris to have established a business in jewellery. The Jains of adult emigrating age (15 to 40 years) have therefore decreased by 9·3 per cent. The death rate amongst Jains is only 11 per mille, and there is little doubt that the survival rate is high in consequence.

Year	Jains		
	Number	Variation per cent	Proportionate strength per 10,000
1901 ..	48,290	....	247
1911 ..	43,462	–10	214
1921 ..	43,223	–0·5	203

156. Variation amongst Parsis—The Parsis have declined from 7,955 in 1911 to 7,530 in this census. In their stronghold, Navsari *Prant*, their numbers, have fallen off from 7,179 to 6,761. In 1901, the total of Parsis was still higher, *viz.* 8,409. The drain through emigration is seen in the incidence of females in the sex ratio of population aged 20-40. In 1911, the females of those ages numbered 1722 to a thousand males. In 1921, the ratio went up to 1,743. The main attraction for the Parsi youth is of course Bombay City which draws away so many of our educated population from other communities as well.

157. Variation amongst Christians—The famine of 1900 resulted in a large crop of Christian converts. The census of 1901 showed that the increase amongst Indian Christians was twelvefold since 1891. Ten years later, there was a slight decline to 7,203. In 1921, however, their number has risen to 7,421. The number of Indian Christians has increased from 6,962 to 7,274. Thus the absolute increase amongst the converts is larger than the total increase amongst Christians of all races. The decline in 1911 was attributed to the reversion of many of the famine-striken who had been sheltered by the missionaries to their old faith

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on their return to their homes after the famine was over. In 1921 the increase is 3 per cent., or about the same as the natural increase estimated for the State. The accuracy of the return has been ensured with the co-operation of the chief mission agencies at work. The arrangement about printed slips has been already mentioned. Also the chief missionary agencies at work—in the Methodist Episcopalian Mission in North and South Gujarat, the Roman Catholic Mission in Charotar, and the Church of the American Brethren Mission (Baptist) in the Rani Mahals—kindly supplied me with detailed estimates of Christian converts in residence at their various mission stations. The Roman Catholic Mission could not give exact particulars by villages of one of their centres, but only mentioned a round figure. Generally the Christian (Census) figures by villages were tallied with the mission estimates and found to correspond very closely. The marginal statement shows that the census figures are generally larger than the mission ones. The Salvationists are however an exception, as shown later on.

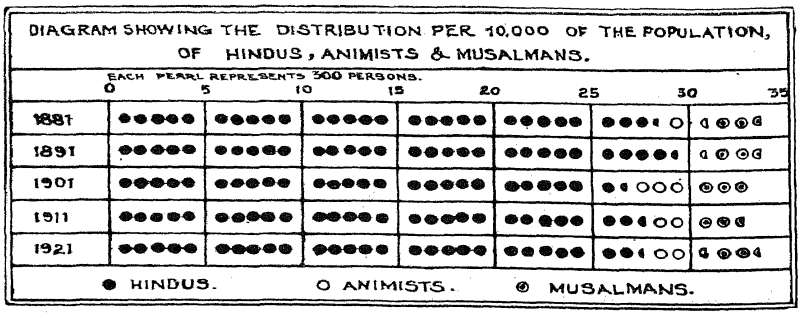
Name of Sect	Locality	Number of Indian Christians according to	
		Census	Mission estimate
Methodist	Baroda and Kadi *Prants.*	4,391	4,154
Baptist	Navsari	290	250
Roman Catholic ..	Baroda Division excluding City.	536	645

158. Variation amongst Brahmos and Aryas—These two sects will be considered a little more in detail presently, when we take the statistics regarding Hindu Sects. In the margin are given the figures since 1901. Both these sects show increases since 1901, the increase among the Aryas being due largely to more active propaganda, and that among the latter to better enumeration. The Aryas are found chiefly in the City and in Navsari, Gandevi, Patan and Pij towns. The village of Bakrol in Savli Taluka also has a congregation of 100 Aryas. Besides these, there are 34 persons returning Veda Dharma as their religion. Presumably these are also Aryas. The normal strength of Brahmos is about 5 families in the City. Most of these were in residence in 1911 also, and it is surprising that inspite of this circumstance, only 6 Brahmos were returned in that census. Apart from Brahmos, three persons were returned as belonging to the Prarthana Samaj, the theistic body of Bombay which corresponds to the Bengal movement. But obviously the real strength of the Prarthana Samaj in the City is larger—many well known families long associated with this movement preferring however to call themselves simply Hindus in this census.

Name of Sect	Number in		
	1921	1911	1901
Hindu Arya ..	645	598	50
Hindu Brahmo	35	6	6

The fancy religions do not seem to be favoured much in this census. It is true that there are five atheists—one male and four females—but the Neo-Hindus, Agnostics and New Dispensationists of the previous census have now disappeared.

159. Diagram illustrating variations in the proportional distribution of Hindus, Animists and Musalmans—The figures for the diffe-



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rent religions have now been analysed and their accuracy sought to be determined. For the facility of those readers who care to pursue the census figures of religious distribution since 1881 the accompanying diagram will be found useful. It has been plotted on the basis of Subsidiary Table I. The Diagram well illustrates the shifting line of boundary between Hinduism and Animism. It also shows how the proportionate strength of Islam has remained almost unchanged in the last forty years.

160. Religion of Urban and Rural Population—Already in para. 94 of Chapter II, the religious composition of the urban population in the State as a whole has been briefly alluded to. In Subsidiary Table III of this chapter, the detailed figures regarding the differing religious composition of urban and rural populations are given by Natural Divisions and contrasted side by side. The sharpest contrasts are provided by South Gujarat, where Animists form 490 per mille of its rural, and only 87 per mille of its urban, population. On the other hand, Parsis constitute 108 per 1,000 of the town-population, while in the village, their corresponding ratio is only 5. In Kathiawad, of a thousand of its town dwellers, 226 are Musalmans, but only 65 per mille of its village population are of that religion.

161. Sect Statistics : reliability of the return—Except in regard to Brahmos and Aryas, and Christian Sects, which had to be recorded all over India, the compilation of statistics in respect of sects generally was left optional to local Superintendents of Census. In this State statistics regarding sects of each religion have been compiled since 1901. The last India Census Report decided against the general record of sects for three reasons. In the first place it was thought that the maize of Hindu sects was so bewilderingly complex, that any return of them was profitless. Secondly, it was thought that as only a relatively small minority of Hindus knew to which sect they belong, it would be practically impossible to obtain a correct return. Finally it was argued that the sects so overlapped one another that there was no hard and fast line by which one sect could be demarcated from another. In support of this argument, Sir Edward Gait quoted the testimony of a Bengali Scholar denying that he was a special follower—either of Shiva or Vishnu as he fasted on the *Shivaratri* day, "because it was sacred to Shiva and on *Ekadashi* day because it was sacred to Vishnu. He planted the *Bel* tree because it was dear unto Shiva and the *Tulsi* because it was dear unto Vishnu. The bulk of Hindus were not sectaries." This instance of cosmopolitanism is rather illustrative of present day laxness in religious practice than of any lack of definiteness in sect-differentiation. Remarking on this testimony Prof. Rama Prasad Chanda says* :—

"But this learned person appears to have withheld one important information. Has he received *diksha* or initiation from a *guru* ? If so, what is the deity (*devatā*) of the *mūla-mantra* or the root formula ? The root formula that the *guru* secretly communicates to the *s'isya* (disciple) contains the name of one single deity only and determines the sect of the *dikshita* or the initiated person. If the *mūla-mantra* contains the name of Vasudeva or Narayana, he is a Vaisnava ; if it contains the name of S'iva, he is a S'aiva ; and if the deity of the *mūla-mantra* is Durgā, Kāli, Tārā, or Tripurasundari, he is a S'akta. The initiated Hindu may be personally free from sectarian narrowness, still he must be classed as a sectary. If the bulk of the Hindus are no longer sectaries, it is because the bulk of the Hindus have ceased to be Hindus in the sense in which their ancestors were Hindus, that is to say, they no longer care to receive *diksha* from the *guru*."

It is true that the followers of Hinduism are free from that strong sectarian bias which distinguishes the mutually exclusive sects that we find in Christianity and Islam. I have myself marked amongst pilgrims to Dwarka, mostly from Upper India and Bengal, that many Saktas and Saivas were not loth to pay their respect to this famous Vaishnava shrine. Gujarat Hinduism however shows some traces of this mutual exclusiveness, even of mutual intolerance, between devout Vaishnavas of the Vallabhacharya and Swaminarayan Sects and the Saivas. As Mr. Govindbhai points out " they (*i.e.*, the Vaishnavas) do not pronounce the Gujarati word *shivavun* (to sew), lest they may thereby indirectly utter the name of Shiva and show Him reverence. The head of the Shaiva Sect, the Shankaracharya of Dwarka, similarly shows hostility to the Swaminarayan and other Vaishnava leaders and the brawls between them sometimes result in legal notices, apologies

* *Vide* his *Indo Aryan Races*, page 144.

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and even criminal proceedings." Thus we see that at least in regard to these two great sects there has been a historic differentiation about which there can be little confusion. These two sects again constitute 72 per cent. of the strength of Hinduism in this State. 11 per cent. follow the tenets of the modern sect makers like Kabir, Ugamsi, Dadu, etc. There is little doubt also from a comparison of the figures that they return their sects fairly correctly. It is only in regard to the so-called Saktas forming 16 per cent. of the Hindu strength that there is any chance of confusion arising. The "Sakta" is a convenient term for those miscellaneous forms of belief with female principle beginning with the *Adya Sakti* of true Hinduism to the various *Mātās* or godlings of disease (or fear) to whom the Hinduised aborigines as well as the animistic Hindus pay their worship. These are the miscellaneous *Devibhaktas* who have been included in the census return generally as "Saktas".

On the whole then the sect-returns in so far as they are concerned with the main divisions can be recommended as fairly reliable. There has been little difficulty in compiling statistics regarding them. No Hindu or adherent of any other religion, has shewn any hesitation or objection to return his sect. Amongst the English-educated sections, on whom religious practice has begun to lose its hold, there was indeed evidence of ignorance of sect-names. In some Household Schedules, I noticed such entries as "Hindu Brahmin" in the sect column. Apart from these comparatively rare cases and except in respect of Saktas or Devibhaktas, the sect record is fairly complete. In 1901, there was no case of Hindu "Unspecified". In 1911, there were 8,893 Hindus who "returned no sects." In 1921, there were only 2,207 such Hindus.*

162. Classification of Hindu Sects—In 1911, the Hindu sects were broadly divided into "(1) those who advocate the rival claims of one or other of the great Vedic deities or of Pauranic accretions to the orthodox pantheon such as Durga, etc., and (2) those who deny the regular deities and prohibit idol worship. To the former class belong (*a*) the Saivas or Smartas, (*b*) Saktas or Devi Bhaktas, (*c*) Vaishnavas, and (*d*) the followers of minor deities, such as Sauryas, Ganpatyas, etc. To the latter class belong the followers of Kabir, Dadu, Santram, Ravisaheb and many others." In deference to this precedent, the sects have been classified in State Table V on this basis, but I venture to dispute the correctness of this classification. In the first place I do not think that sectaries like the Kabir panthis, the Dadupanthis, the Bijmargis and others "deny the regular deities"; in the second place, the classification ignores the historical evidence of the genesis of Hindu Sectarianism. Lastly it must be mentioned that a few minor errors have crept in: the new sect which follows Nrisinhāchārya was classed under Vaishnavas, which they are not; the Nayakaka sect should have been more correctly grouped under "Worshippers of Musalman pirs or saints"; and merely *guru*-worshipping sects like Gopinath and Kuberpanth have been regarded as minor Vaishnava denominations. A new mode of classification is now prepared according to which the sects have been rearranged in Subsidiary Table IV. A summary is given in the margin. For there are the movements within Hinduism, but statistically regarded as separate, which aim at thorough and comprehensive reform. These movements are the Arya, Brahmo and Prarthana Samajas. Next are those other movements—some of recent origin, like the Radhaswami, and others dating from about the 16th century associated with the names of the great sect makers like Kabir, Dadu, Ugamsi etc. aiming at reform of one or other of the phases of Brahmanic Hinduism—like idolatry, sacerdotalism, or excessive

Classes of Hindu Sects	Strength in 1921	Proportion per mille of total Hindus
All Hindus (including Brahmos and Aryas)	**1,742,840**	**1000**
Movements of comprehensive Reform	717	....
Movements checked by defence of Orthodoxy	167,958	96
Guru-Worshipping Cults ..	21,101	12
Orthodox sectaries based on Vedic and Pauranic Hinduism ..	1,329,813	763
Sects on the borderland of Hinduism and Islam	8,015	5
Sects tending towards Animism.	212,849	122
Hindu Miscellaneous and Unspecified	2,387	2

* Mr. Govindbhai on the whole seemed inclined to distrust the general accuracy of the sect returns, but Mr. Dalal thought that the information collected was valuable and deserved to be compiled. I am certainly inclined to consider them reliable enough, at least more so than the returns of age or infirmities.

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ritualism. In respect of some of these. the mere worship of the *guru*, although in evidence, has not yet quite warped the motive of the original founders.

Intermediate between these and the great body of orthodox Hindu belief are the little scattered *coteries*, each clustering round some teacher or saint, with little speciality in doctrine or attitude, except almost divine worship of the *Guru*. Most of these like Gopinath panth, Kuberdasi, Parnami sects are offshoots from Vaishnavism. The Ravi Saheb's sect is a sub-creed of the Kabirpanth. The Ramdevji Panth is Guru-worship pure and simple, with elements of totem-worship: a horse sacred to the memory of their founder figuring largely in their ritual. The symbolism of their worship seems similar to that of Bijpanthis, to be referred to later. To this sect, mostly unclean castes are attracted. The Patwala is a recent Kathiawad sect, who worship Patwala the name of their reputed founder. The Bhabharam is a very old sect, the founder, Bhābhāram who was a Kohoja (Amin) of Vaso, being born in 1385 A.D. The sect originated in the usual: its founder acquiring a reputation for miraculous powers gathered a large Garasia following. Bhābhāram was known for his mastery of the Vedas. He combined the theory of the Avatars with elements of Saivism. He preached that the way to salvation lay in *Atmasuddhi* or individual purity. On his death, he and his book were worshipped. Unlike the other Guru-worshippers, the Bhabharamis do not take any material emblem of their founder, *e.g.*, *paduka* (sandals), but set up a flame (*jyot*) as his emblem. The Nayākākā, a Pirana sect, claims kinship with the Bhabharamis, but this is denied by the latter.

Then, there are the three great Hindu Sects—Saiva, Sakta and Vaishnava—with their numerous ramifications, some confined strictly to the intellectual classes, and others extending their domains over the unlettered, and even the unclean sections as well.

163. A brief Survey of Hindu Sects—the three principal Divisions*—The bulk of orthodox sectaries date their origin from the age of the Puranas—or that period when Buddhism was beginning to show signs of decay in the fourth and fifth centuries of the Christian era. The Caste system which was then fast developing as a defensive weapon to withstand alien influences came as a powerful aid to the stereotyping of religious practices. The problem before the great Hindu revivalists of the succeeding centuries—notably Sankara—was how to reconcile the deeply intimate personalised worship of the Indian with the strictly monistic philosophy of the Vedanta—with its postulate of an impersonal and "unknowable" Absolute. This led to the development of the belief in material incarnations and to the selection of deities, hitherto considered minor in the strictly Vedic pantheon—like Siva and Vasudeva or Narayan or Vishnu. The belief in material personations or *Avatars*, became distinctive of Vaishnavism; while Siva represented the old Vedic storm-god Rudra—"the condensation of two primordial agencies, the striving to live and the forces that kill"; in himself, there was an austere aspect which appealed only to the intellectuals, but through his consort, known under innumerable names, the Saiva cult lent its countenance to the development of the female principle or Sakti (cosmic energy) in sectarian worship. The development of personal deities led to Bhakti or devotion as one of the recognised roads to salvation. The problem of *Karma* which persists through Hindu religious history at least from Pauranic ages—we find little traces of it in Vedic Aryanism—also supplies the key to the differing attitude of the two principal sects—Saiva and Vaishnava. Saivism under the inspiration of Sankarāchārya conceived of *Karma* with its burden of rebirths—and the manifested world itself with all its variety as the results of *Maya* or man's ignorance. Vaishnavism on the other hand conceived of life itself as a projection from the Supreme Being—His *lila*. Advantage was taken of Sankara's adualistic theory by the Vaishnavas to develop and justify a joyful and even voluptuous cult. A system of personal

* I have purposely refrained from giving detailed accounts of these sects. For details the reader is referred to recognised authorities on the subject like Dr. Jogendra Nath Bhattacharya, *Hindu Castes and Sects*, and also to paras. 188-214 of Mr. Govindbhai's Report and to pp. 136-155 of Mr. Dalal's Report.

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theism like theirs could do little else. But there were various gradations corresponding to the degree of compromises that were made with the strictly Vedantic position. The Ramanuji probably represents one of the earliest of these compromises. Ramanuja flourished in the 12th Century. He took on the tenets of an old Vaishnava Sect, the Bhāgavatas "who worshipped the Supreme Being under the name of Vasudeva (subsequently identified with Krishna, as the son of Vasudeva who indeed is credited by some scholars with the foundation of that monotheistic creed)". With the Ramanujis the worship was primarily of Vishnu (Narayan) with his consort Sri or Lakshmi and then secondarily they concerned themselves with their incarnations—Rama with Sita, and Krishna with Rukmini. In its speculative side, the Ramanuji divided itself into two main divisions, with their *ape* and *cat* theories of divine grace—not unlike the controversies of the Arminians and Calvinists—the former holding that man must cling to God, co-operant with Him, like the young of the monkey to their mother, and the latter believing that the human soul is seized by Vishnu Himself and rescued, as the cat does to her kittens.* The Madhavacharis on the other hand went over to the extreme dualistic position. The later Vaishnava sects concerned themselves primarily with Vishnu's incarnations—the Ramanandis with Rama and his consort, and the others with the various phases of Krishna's life and career. The Ramanandi was a levelling and popular movement, and allying itself as it did with the personality of Ram, the paragon of Indian chivalry and virtue, and his consort Sita, equally famed as the emblem of wifely chastity and devotion, it was a noble and elevating cult and its influence particularly in the literature of Hindi has been as profound as it has been beautiful. No such praise however can attach itself to some of the sects that concerned themselves with Krishna worship. Vallabhacharya, a Tailangi Brahman, took up the doctrine of *lila* and made of it a bright-hued and gorgeous ritual. "If the human soul is identical with God"—said this Vaishnava prophet ;" the practice of austerities must be discarded as directed against God and it is rather by a free indulgence of the natural appetites and the pleasures of life that man's love for God will best be shown."† Thus the worship of Vishnu developed into an elaborate system of erotic theism—concerning itself exclusively with the mythical incidents of the life of the infant Krishna (Bal Gopal) in Vrindāvana. The doctrine of Bhakti was interpreted into absolute self-surrender to God and even to His earthly representatives. Much of the sexual license resulting therefrom has now happily disappeared through the influence of education. The later developments of Vaishnavism, with which we are mainly concerned in this State, were chiefly in three directions. First, there was the Puritan reaction against the objectionable developments of Vallabha's creed, started in the early part of the 19th century by Sahajanand, an Awadhi Brahman who subsequently took the name of Swami Narayan. The Swami-Narayanis represent a return not only to a more austere mode of worship but also in a real sense to the worship of Vishnu. In the second place, modern sect makers amongst Vaishnavas like Kuberdas, Gopinath and others have imitated the great masters but the movements associated with their names have generally degenerated as pointed out already into mere man-worshipping sects and the original preachings of their founders are little remembered. There are also degraded varieties of Vaishnavism mainly prevalent amongst unclean castes. The followers of Haridas Bawa are mostly Turis, Dheds, and Chamars. In their rude *Deris* or *thanaks* they have unshapen stones. The Tulsi upāsaks are similarly Dheds and Bhangis, who being denied access to the Vaishnava temples, have taken to the basil plant for worship. Finally, there was a further progress towards Krishna-worship amongst the Radha Vallabhis, whose sect was started in the latter part of the 16th Century ; these sectaries believe in Radha, and Krishna's love for her as the governing principle of their religion. In thus emphasizing their reverence for the consort and darling of Krishna, they verge very closely upon Sāktism, one of the three principal divisions of the Hindus. Sakti, as has been explained already, is the female principle, identified usually in Hinduism, as

Principal Vaishnava Sects

	1921	1911
Ramanuji ..	108,995	104,987
Madhavachari ..	325	71
Ramanandi ..	478,239	434,679
Vallabhachari ..	159,163	171,460
Swaminarayan	56,997	53,721
Radha Vallabhi	3,515	1,566

* Macnicol, *Indian Theism*, p. 110.

† Vide Article *Hinduism*—by Dr. Julius Eggeling, Encyclopædia Britannica, Vol. XIII, p. 510.

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the wife of a god as his energy in action. The Saivas already initiated the worship of the female principle, but they strictly subordinated it to the male. The Saktas on the other hand exalted the worship of the Devi, beyond everything else. The theory of God and His Sakti had been already foreshadowed in the Vedas as Prof. Eggeling points out in the conjoint worship of Heaven and Earth, and in the later Saiva mythology, "this theory finds its artistic representation in Siva's androgynous form of *Ardha Narisa* or half-woman lord, typifying the union of the male and female energies, the male half in this form of the deity occupying the right hand and the female the left hand." This symbolism explains the two main divisions of the Sakta cult—the "right hand" and the "left hand" followers. Along with this worship of Sakta—in many forms either beneficent or terrible—the Saktas have developed an elaborate hierarchy of feminine figures—ten *Mahāvidyās* (sciences), 9 *mahāmātaras* (great mothers or wives of principal gods), 8 *Nayikas* and different sorceresses or magic spirits (Yoginis, dākinis and Sākinis). In this State we are concerned with only two of the consequences of the Sākta doctrine. In the first place it is important to note how its advocacy of the female principle has afforded an easy means for absorbing aboriginal beliefs into the fringes of Hinduism. True Saktas are not at all numerous in the State.* Certain of the artisan castes like Ghanchis and Sonis, the bulk of Marathas, a good portion of the Kolis and a few others may be rightly considered Saktas. On the one hand, Dakshinācharis (or the right hand followers) are hard to distinguish from Saivas, on the other there are numerous points where Saktism shades into Animism. A large proportion of Kolis and the majority of aboriginal tribes who are assimilated into Hinduism pass themselves off as Devibhaktas. Secondly there is the aspect of Saktism which is connected with the worship of *Kula devaks* (or tree totems) which is prevalent particularly amongst the Marathas. The indwelling *Kula Yoginis* of these trees were as Professor Chanda points out vegetation spirits; these *kula* trees serve the purpose of *gotras* in marriages amongst this community. The *nagchampa* (mesua ferrea), *rudraksh* (elaeocarpus ganitrus), *vad* (ficus Indica) etc. are examples of these tree-totems.

164. Modern Sectaries—Kabirpanthis etc.—The Ramanandi has been mentioned as a levelling and popular movement. It was perhaps the first of its kind and it initiated from the 16th century onwards a series of profoundly interesting movements the chief of which was founded by Kabir, a disciple of Ramanand. Keeping in close touch with Vaishnavic methods, Kabir was also greatly moved by the democratic impulse of Islam. His reforming activity lay rather in reinforcing the monotheistic principle in Hinduism; through his advocacy of a spiritual worship of God, he set his face against idolatry; and lastly, his campaign was directed against priestly privilege. Horace Wilson remarked on the quaker-like spirit of the Kabirpanthis, and their abhorrence of all violence. In their Vaishnavic leanings, they allied themselves to Ram rather than to any other incarnation and thus the moral value of their movement was, and still continues to be, high. Dādupanthis, following another of Rāmānand's disciples and successors combine their Ramait cult with a strong flavour of Sankara's teachings. The characteristic of these as well as of Udapanthis and allied sects is their rejection of idolatry and insistence on *jap* or spiritual contemplation. The Bijpanth founded by Ugamsi of Benares 500 years ago is rather a development of Sāktism. The use of mystic letters and syllables called *bija* (germ) and of *chakras* (magic circles) and *yantras* (diagrams) is well known in the Sākta ritual. These features are present also in the worship of the Bijpanthis. They believe in an impersonal god, symbolised by a flame. They have images also of Rama, Hanuman and a *linga* (phallic emblem of Siva), with an emblem of Sakti in the centre. They have

Modern movements checked by defence of Orthodoxy

	1921	1911
Kabirpanthi ..	30,861	34,954
Bijpanthi ..	131,455	170,645
Dadupanthi ..	1,849	2,401
Udapanthi ..	142	511
Radhaswami ..	254	....
Nrisinhacharya's Sect	2,003	68
Other minor Sects	1,394	698

* The Sākta pandits are fond of reciting a Sanskrit couplet:

"*Gaude prakasita vidya Maithilaih prabalikritā*
Kvachit Kvachin Mahārāshtre Gurjare pralayam gatā."

"The cult was proclaimed in Gaud and developed by the Maithilas: but it is only occasionally met with in Maharashtra and has disappeared in Gujarat."

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bhajans. In these Bijpanthi ceremonials there is a mixture of the tenets and practices of the three orthodox sects. But the rituals are riddled with symbols, and conducted in secret, they resemble the proceedings of a mediaeval secret fraternity. The Nakalanki *panth*, founded about a hundred years ago by three pious women, worships Nakalank—the stainless—generally identified as the tenth *avatar* of Vishnu. The Satyakeval or the Kaivalya *panth* is reported to be a recent movement amongst the educated Hinduised aboriginals in Navsari *Prant*. The Saji Sawai is an old sect founded 400 years ago by one Saji Bāwā. They worship the deity under the name of *Boudhya Kalanki* whose traditional portrait in the garb of a Rajput Chieftain forms the central object of their adoration.

165. Brahmo and Arya Samajas—All the sects above described have developed out of the main body of Hinduism. Their reforming activity has not been wholesale, nor have they completely broken off from orthodoxy. A multitude of extraneous influences have acted upon them—not a few of these being from Islam. With the beginnings of English education, a new influence that of Christianity was added, and the old reforming activity that has been always latent in Hinduism was thereby renewed and quickened. The theistic movements associated with Raja Ram Mohan Rai and Dayānand Saraswati are too well-known to need any detailed description. Both monotheistic movements, they differ largely in their attitude towards the Vedas, and in the practice of their propaganda. The Arya Samāj regards the Vedas as solely authoritative. The Brahmos, though paying due respect to these, are willing to accept truth from all religions. In this they have succeeded in developing what Mr. Blunt called in the United Provinces Report of 1911 an attitude of "limp eclecticism" which has been fatal to its progress in numbers. Because of this eclectic and tolerant attitude, the Brahmos have not been able to develop anything like the vigorous missionary propaganda of the Aryas.* Like all missionary movements Aryaism has taken up an attitude of definite opposition and even hostility to Christianity and Islam. Besides, Aryaism founding itself on the Vedas, the fountain of Hindu wisdom, has a distinctively national appeal, while its attitude towards social reform though always vigorous and trenchant has never favoured that tendency towards Anglicisation which is in evidence amongst the Brahmos. In Gujarat, neither of these movements has yet obtained a strong footing. The Prarthana Samaj, at least in Gujarat, is a dying movement. The Arya Samaj, although more vigorous, has still to contend with a good deal of orthodox opposition. In Gujarat, few sects have any chance, at least among the lettered classes, which attempt to interfere to any extent with the caste arrangements. Their progress therefore has been very slow as shewn in para. 158.

166. Two recent movements : Radhaswami Sect and Sreyas Sadhak Adhikari Varga—Movements of reform that are touched with modern influences and yet have remained within the fold have greater chances of success in the State. In this respect, this census records the progress of two movements, one of which is only a very late importation, and the other is a distinctive Baroda movement which has come into prominence only in the last two decades and has attracted to itself a fair number of educated followers. The former is the Radha Swami Satsang (with 254 members) and the latter is the Sreyas Sadhak Adhikari Varga founded by the late Sri Nrisinhacharya in Baroda in 1882. This last named sect—although the authorized exponents refuse to call it a sect—has now 2,003 followers against only 68 in 1911.†

The Radha Swami Satsang‡, though well-known in the United Provinces, is new to Gujarat. Its name commemorates the twin founders of the Sect, an Agra Banker who retired from worldly life and took the name of Sivadayal Swami, and his wife Radha. He publicly proclaimed his doctrine in 1861. The second *guru*, Rai Saligram Saheb Bahadur, was an educated person who rose to high office under the British Government. The third *guru*, a Bengali Brahman of high university education, Brahma Sankar Misra, gave to this sect its present consti-

* The Brahmos themselves seem to care little for strength of numbers. In a recent article in their accredited organ, the *Indian Messenger*, it is declared : "A rationalistic Church like the Brahmo Samaj should be too wide-awake to be unconsciously drifting towards swelling their numbers."

† It has been suggested to me since writing the above that the 1911 figures are not correct and that this sect had a larger following then than now.

‡ Details for this Sect have been taken from Dr. Farquhar's Modern Religious Movements in India, pp. 157-173.

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tution and church government. The doctrines of this sect are a mixture of Vaishnava philosophy and of Buddhistic ideas. God, the World and the Soul are recognised as parts or *amsas* of the one Reality. Its conception of the Universe as having three planes, the Formless, the World of Form and the World of Desire—each with sub-sections—has its analogues in Buddhism and is familiar to the students of Theosophy. Like the latter organisation it has an esoteric circle, and the method of spiritual exercises is strictly a matter between *guru* and disciple. In all these respects, the Sect shows the influence of modern Spiritual writings. In their belief in their *guru*, as the Son of the Supreme, in their insistence on works of faith and charity and the spirit of service, and in their mode of regular worship, the Radhaswamis betray a Christian stamp; but otherwise they are curiously untouched by modern ideas. The sect has little or no missionary propaganda; it carries on no educational work. On vital matters of social reconstruction, it is strangely apathetic. The Radhaswamis of the State are found in Padra and Dabhoi Talukas. Their recent advent is testified to by the local reports. An opposition movement to this sect seems also to have been started recently by the orthodox Vaishnavas in Padra taluka; this is known as the Adinarayan *panth*, but the census does not show any trace of it.

The Sreyas Sadhak Adhikari Varga* or the Society of Seekers of Spiritual Bliss is an interesting movement urged into existence by the necessity felt amongst spiritually minded Hindus of education for a system of worship that is less ritualistic and more truly devotional. Its founder, a Nagar Brahman, was born in 1853. After a successful secular life led in Government service, he came under the influence of a Sadhu called Mohan Swami who initiated him into a deeper spiritual insight. By the force of his character as an exemplary householder, and his spiritual powers, he gathered round him a body of disciples who constituted themselves into the above named Society. This *guru* died in 1897. The leaders of this movement have always strongly dissociated themselves from any sectarian bias. The aim of the society is to subordinate mundane to spiritual bliss and in that view, their teachings have an individual, as well as a general basis. The general teachings are grounded on Vedic religion and communicated through preachings, and propagandist literature. The individual teaching is restricted to the initiated few. There is thus an esoteric as well as an open circle. The occult teaching consists in the imparting of the four forms of Yoga to the individual neophyte, which is continued through constant watch and examination. In its philosophy, it leans towards the *Saguna Brahmavad* of Sankara, but it tolerates all forms of worship. Of the three traditional ways to Salvation—through *Jnana* (intellectual development), devotion and action, the Society insists on the first, subordinating but not rejecting the other two. The second *guru*, Sri Upendrāchārya, has continued his father's work and has further added æsthetic elements into the worship. He with the aid of his wife has also taken a worthy interest in the education and mental advancement of women, and encouraged their association with men in common worship in their annual devotional festival (Sādhana Samārambha). The Society maintains some successful magazines and has published a rather voluminous literature.

167. Variation in Hindu Sect returns—In the above paragraphs a brief survey of the Hindu sects has been given with a view to show that there is a continuing thread throughout in evidence in Hindu religious history, giving to Hinduism a unity through all its differences. The classification adopted in this Report is based on the recognition of this essential unity. The main figures have been already given (*vide* para. 162). A table and a diagram are appended in the margin to show the strength and variation in the three principal sects. The census return of Saktas is, as shewn already, vitiated by the inclusion of spurious Mātā-worshippers of aboriginal descent. For the purpose of Subsidiary Table IV therefore only 30 per cent. of the census total of Saktas are shewn under Saktas in

Name of Sect	Strength in		Variation per cent
	1921	1911	
Vaishnava ..	859,184	802,508	+7·6
Saiva ..	385,641	350,495	+10·0
Sakta and Devi Bhakta ..	283,294	287,547	-1·5

* A fuller account of this body is contained in a note contributed by Mr. Narmadashankar D. Mehta, B.A., LL.B., andpublished at the end of this Report as Appendix III.

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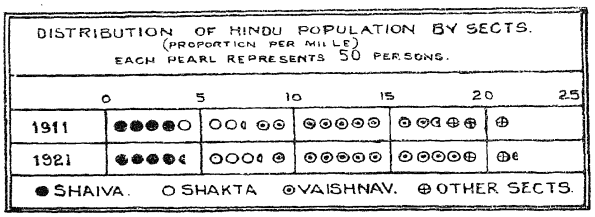
Class IV. and the rest are included under sects that tend towards Animism. Included in this class are degraded Vaishnavas like Hari Bawa's followers and Tulsi Upasaks. There are also the totem worshipping sects—like the Vadvalas who are Rabaris and worship the spirit that resides in the Vad tree, the Khijadiapanthis who may also be considered a type of degraded Radha Vallabhis, although they belong to the clean castes, and the Ajepal sectaries who are worshippers of shapeless stones, representing Ajepal, and mostly belong to the untouchable classes. The total for this class based as it is on census returns of Animists and Hinduised Animists, has to be rejected as unreliable. The estimates given in para. 152 of what are there called Animistic Hindus and Hinduised aboriginals may be accepted as more accurate, and the total of these two sections estimated therein may be taken also as indicating approximately the strength of Hindu Sects that have Animistic affinities.



The features of the Sect returns are the large increase of Saivas and, amongst Vaishnavas, the increase amongst Ramanandi and the drop amongst Vallabhacharis. The increase amongst Saivas must have been largely at the expense of the Saktas, but the figures regarding the latter being untrustworthy, no true conclusion can be formed. The loss amongst Vallabhacharis must be due to the active propaganda of the Swaminarayanis who have thriven through prosperous endowments and have lost much of their old puritan austerity of manner. On the other hand it has to be pointed out that the number of Vaishnavas who have specified no sub-sect has largely increased since 1911. The Ramanandi is the largest Vaishnava sect. Through confusion of names their number must have included a good few Ramanujis in 1901. The variation amongst Ramanandis and Ramanujis since 1901 is indicated in the margin. which shows that only the figures of the last two censuses can be accepted. The modern sects like Kabirpanthis and Bijpanthis have shewn decreases—particularly the latter. Possibly there is a return to the parent sects with which these are connected. The guru-worshipping cults do not show much variation. The Parnamis and Santrampanthis have declined. A great many persons formerly belonging to these sects have reverted to the orthodox fold and are content to return plain "Vaishnava" in the Census.

Year	Ramanandi	Ramanuji
1901 ..	506,340	18,060
1911 ..	434,679	104,987
1921 ..	478,239	108,995

There remain now the sects that lie midway between Hinduism and Islam. Their strength has increased from 5,714 to 8,015 in this census. The Pirana-panthis are also known as Kakapanthis, the Nayakakas evidently being a later off-shoot. The founder was one Imamshah, a Saiyad of great purity and learning. At present there are five principal *gadis* or places of worship of the Pirana dedicated to the five chief names of the cult—Imamshah, Surabhai, Bala, Mahammad Shah Bakaralli and Nurshah. The first four are called Kakas. The Momnas are identified with the last-named; the Pachia Rabaris, Sonis and Kansaras are attached to Surabhai, the Shaikhdas to the third named. The Matia Kanbis, Sutars, Sonis, Kachhias and Kolis belong to Bakaralli. Imamshah claims the largest number of adherents. The number has increased in this census, partly because, as pointed out below, the tendency to pass off as Hindus is on the increase, and partly due to real conversion.

The Musalman followers of these Pirs have declined from 2,102 to 2,001. One reason is probably that some of the Shaikdas and Momnas may have wrongly returned as Hindus. On the other hand the Musalman followers are apt to return themselves under the orthodox fold of Sunnism. All reports however agree that the followers of these Pirs are on the increase.

168. Variation among Musalman Sects—Coming to other religions, we are met with less sectarian complexities. Islam is too well known to need

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description, and its sect differentiations are far less intricate than those of Hinduism. The spiritual allegiance of Musalmans is divided between two churches—the Shiah and the Sunni. The majority of Musalmans belong to the Sunni Church, which was founded by Mansur, the second of the Abbaside Caliphs. Almost all Sunnis acknowledge the spiritual headship of the Ottoman Sovereign. The Shiahs trace their origin to "the Caliph Ali and the immediate descendants of the Prophet, regarded as the rightful expounders of his teachings . . . . The question of the title to the spiritual and temporal headship of Islam forms the chief point of difference. . . . The Sunnis are the advocates of the principle of election; the Shiahs of apostolical descent by appointment and succession."* The Sunnis are further sub-divided into four principal sub-sects—the Hanafi, Shafei, Maliki and Hanbali. But it is open to the followers of any one of these persuasions to worship validly under another. The bulk of Sunnis of the State are followers of Hanafism. Of the Shiah sects, the Agakhani is the most important in this State. The bulk of Khoja and Memons belong to this sect. A large part of Vohoras, Mughals and Arabs are also Shiahs. In the margin are indicated the Musalman sect figures for the last three censuses. The Sunnis are gaining progressively at the expense of the Shiahs, whose present strength is even less than half of what it was 20 years ago. From Damnagar in Amreli *Prant*, it is reported that amongst the Aga Khani Khojas there, a recent schism has led to a section calling themselves *Masidia* (presumably Shiahs who refuse to acknowledge the Aga Khan as head). The Musalman followers of the Pirana Sect have been already dealt with. A few Musalman Girasias are followers of Bhābhāram and may have been wrongly returned as Hindus.

Name of Musalman Sect	1921	1911	1901
Sunni ..	142,863	136,792	125,853
Shiah ..	15,807	21,907	35,506

169. Variation among Jain Sects—Jainism is a religion of high antiquity. Modern scholarship has now begun to recognise its traditional claim to an existence at least parallel to the Vedic epoch. The references in the Rik Veda to Jain condemnation of Soma and animal sacrifices and to Rishabha dev, the earliest of the Jain Tirthankaras, lend colour to their claim. The peculiar type of Jain thought also—its materialism of things and even emotions and its categories of *Jivas* with specific ranks given to everything animate or inanimate point to a species of Animism which may be even older than Vedic Hinduism.† The Jains claim their religion to be eternal, coeval with matter, renewing itself through unbegun and unending cycles—*avasarpini* and *utsarpini*—and in every age they hold that their 24 Tirthankars or perfect *jivas* appear to whom the reverence of mankind is due. The Jains themselves strongly repudiate the Brahmanical claim to regard them as a dissenting sect.‡

In the *Jaina Gazette*—November, 1921,—a Jain is defined as a man that believes "that the soul of man of any living being can by proper training, etc., become omniscient like the soul of *Jinal* conqueror of all passions; that the world consists of six eternal, uncreated, indestructible substances; and that the path to eternal freedom lies along the triple road of right belief, right knowledge and right action as disclosed in the Jain sacred books, in accordance with the tradition of Lord Mahavira. This is the essential minimum".

There are three Jain sects. The most ancient of the schisms is between the Digambara and Svetambar, each disputing with the other for the palm of antiquity. Their chief differences consist in their respective attitude to the sanctity of nakedness and the denial to women of the hope of final redemption. The Digambaris exalt nudity, at least in respect of the images of their Tirthankaras and also in regard to their *Yatis*, (ascetics) and believe that women are incapable of attaining eternal bliss. Amongst the Svetambaras, a modern schism has arisen on the point of idol-worship. Lonkashah (*flor.* 1640) led this movement and held that idolatry had no place in the authoritative Jain canon. He rejected 13 out of

* *Vide* Ameer Ali's *Islam*, p. 75.

† But there is no doubt that there is a great admixture of Hindu ideas in present Jain practices. They admit Hindus as temple servants and Brahmans as ministrants in their social ceremonies. Finally their recognition of the caste-system unauthorized in their own canon is the greatest evidence of their succumbing to Hindu influences.

‡ *Vide* Mrs. Stevenson, *Heart of Jainism*, pp. 89, 94.

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the 45 *angamas* forming the Jain texts as spurious. His followers are known as Sthānakwasis. The strength of the three sects is indicated in the margin. The Digambaris seem to have declined largely. The Swetambaris constitute 82 per cent. of the total Jain population. The spectre of "Jain unspecified" has arisen for the first time in this census. Possibly this is due to the general indifference of young Jains to the tenets of their religion.

Name of Jain Sect	1921	1911	1901
Swetambaris ..	35,267	36,460	34,410
Digambaris ..	3,659	4,389	9,599
Sthanakwasis ..	3,524	2,613	4,281
Jain Unspecified	773	..	..

170. Variation amongst Parsi and Christian Sects—The vast majority of Parsis are Shehenshahis. The other Sect is called Kadmi. The schism is of modern origin, dating from 1736 A.D., when an Irani, called Jamshyd, arrived from Persia and set up a dispute about the reckoning of the calendar. Those who continued the old Indian method of computation came to be known as Shehenshahis and the others are called Kadmis. These sectarian differences seem to have begun to sit lightly on present day Parsis. Many educated Parsis pay little heed to them and as a result, 926 Parsis or 12 per cent. have returned no sect names.

Name of Parsi Sect	1921	1911
Shehenshahi..	6,547	7,778
Kadmi ..	57	177
Unspecified ..	926	..

The Christian community consists of 7,274 Indians and 147 Europeans, Anglo-Indians and allied races. Of these latter only 44 are Anglo-Indians. The Anglo-Indians are chiefly Roman Catholic (23) or of the Anglican Communion (11). One Anglo-Indian returned himself as Indian Christian. The Europeans, Americans and other allied races number only 103. Except 15 who are of the Methodist persuasion, and four Baptists, the rest are almost equally divided in their allegiance to the Churches of England and Rome. The chief Mission agencies at work amongst the Indians are the American Methodist Episcopal Mission, now the largest agency, which came to Baroda in 1870 and have concentrated their attention to Baroda and Kadi divisions; the Salvation Army working chiefly in Baroda *Prant*, but with their head-quarters at Ahmedabad; the Church of Brethren Mission (Baptist persuasion) working chiefly among the Kaliparaj people in Rani mahals; and the Roman Catholic Mission at Anand with about seven villages in Charotar under its jurisdiction. The main sect figures are shewn in the margin. The Baptists are the result of the Vyara Mission work of the last ten years. The Methodists appear to be stationary. The drop amongst Salvationists is probably owing to the defection amongst its converts and perhaps to a certain extent to omission in record. The Salvationist organisation was approached by the Census Staff along with the other missionary agencies to co-operate, but they did not make any arrangements, to my knowledge, for issuing printed slips to their converts. I presume, a certain proportion of their converts must have been returned, in default of such co-operation, by the enumerating staff, as "Dheds". The recent conversion however of several Salvationists to the Arya Samaj at Sokhda, proves that a few of them are reverting to their old faith or are being netted by the Aryas.

Name of Christian Sect (Indian Christians)	1921	1911
Church of England ..	7	..
Baptist	290	..
Lutheran	155	..
Methodist	4,940	4,833
Presbyterian ..	13	189
Roman Catholic ..	1,107	400
Salvationist	762	1,540

171. Present day Religious Organisation in Baroda City—The capital of the State is naturally the centre of all intellectual and social activities; whatever religious stirring that happens cannot but have its effect, if not its origin, in the City; a study of the present condition of the religious organisation there will not fail to be of interest. We shall begin with Hinduism the chief religion.*

Hinduism—The Hindus constitute 79 per cent. of the City population. The places of worship for their use number about 150. Many of these temples are unused and falling into disrepair. The Vallabhachari temples are looked after, however by their Maharajas and the Swami Narayan is "an example of the good

* Materials for this paragraph have been taken mostly from a study on the same subject published in the Indian Journal of Sociology, *vide* pp. 61-68 and 301-44 of Vol. I, 1920.

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condition in which a temple may be kept when there is a responsible authority to see to the affairs of business." With the exception of a few private temples, the rest are in receipt of State grants averaging Rs. 50 a piece per annum. The present condition of these temples is due no doubt to the general indifference of the modern Hindu. There are far too many temples, for present requirements or to be kept in satisfactory condition. At present little occurs in the temples except the daily *puja*. In only a few temples—and these are mostly private ones—there are *bhajans* or congregational singing. At least 73 of the temples, inspected in a recent enquiry, showed no provision for *Kirtans* or public recitation of Pauranic discourses. There is occasional religious instruction in private homes through the agency of Sastris. The State has inaugurated a new scheme under which a number of *updesaks* are to go round periodically to temples and give discourses. The Sanskrit Pathsala and the Garoda School are institutions maintained by the State for the training of Hindu priests. There is a small Arya Samaj. It is at present without a habitation. Two or three small attempts were made in the last decade to unite all thinking Hindus in a form of religious service, with a discourse, somewhat similar to the Brahmo Samaj. Under the name of Brahma Sansat, this movement continued for some time but has now fallen through. The idea has been again revived recently, but on a much more modest scale, with Aryas, Brahmos and a few Hindu families co-operating. To complete the list of Hindu activities it is necessary to add that there is a Theosophical lodge with a small membership. The activities of the Sreyas Sadhak Adhikari Varga have been already referred to.

Islam—The Musalmans form 16 per cent. of the total population in the City. They are mostly found in specific neighbourhoods of the City like Mughal Wada, Wadi, Pani Darwaja, Yakutpura, etc. The Shiahs are mostly in the first named part of the City. The chief Shiah sects found to reside are Daudi, Sulemani and Alwiyya. All these have mosques of their own. Including the Sunni places of worship, there are about 40 mosques, the chief of which is the Juma Masjid completed in 1919 at a cost of Rs. 1,45,000. It is significant of the relation of the State towards Islam which is recognised and also endowed, that the State contribution towards the building of this mosque came mainly from the Devasthan reserve fund of Hindu temples. Attached to this Juma Masjid is a Muslim library under the control of the Baroda Anjuman. It contains nearly 5,000 books chiefly in Arabic and Urdu. Provision for religious instruction seems to be looked after in Madrassahs attached to the principal mosques. The Sulemanis and Alwiyyas have each a Madrassah attached to their mosque. The Sunnis have more than one, the chief being at Mahmad Wadi with 80 pupils. There is provision for advanced teaching at the Juma Masjid. Each Sect has its own Mullah. There is besides a Qazi of Baroda. The Anjuman-i-Islam is a representative Muslim institution. Its present function is in connection with the Juma Masjid, the management of its library and the assistance of poor students in the community. The Shiah sects have each got its sectional society. Sufism claims a small number of adherents who call themselves Jamat-i-Mashaikh-i-tariqat. There are numerous Muslim shrines, chief of which are 16. Most of these have cemeteries attached to them. There are 12 other cemeteries.

Jainism—There are 2,296 Jains in the City. The bulk of these are Swetambaris who have 16 temples and 3 *apasaras* (Monasteries). The Digambaris, who form only 12 per cent. of the total City Jains, have two temples and one *aparasara*. The Sthanakvasis have two *apasaras* in their charge. Besides there is a large Dharmasala in Ghadiali Pole in the City Ward, for the use of Jain traders. The Jains maintain their schools for religious instruction for both boys and girls. In the *apasaras*, morning lectures are given by Jain Sadhus, particularly in the monsoon, when they are forced to stay in the City. An Association recently started is called Vir Dharma Prasaraka Sabha to look after the interests of the Jains. The Baroda City Jains maintain two libraries: the Atmaram Jain Jnana Mandir which is housed in a magnificent building, and the Hansvijaya Jain Library with over two thousand books. Both these libraries have free reading rooms attached to them. In the first named library there is also a night school where special religious instruction is imparted to 30 students.

Christianity—The Christians number 1,048 of whom 75 are Europeans and allied races, 24 are Anglo-Indians and the rest Indians. Divided by sect, there are 451 Methodist Episcopalians, 461 Roman Catholics, 82 Salvationists,

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45 members of the Church of England and 9 of other denominations. Between these communities, " there appear to be no common activities or combined efforts which could be called for religious or social welfare." The Anglicans, who are mostly Civil and Military British officers and their wives, have a church in the Camp which is looked after one Sunday in the month by a Chaplain on the Government of India Ecclesiastical Establishment. The Roman Catholic Church is now in the charge of a Goan priest in the jurisdiction of the Archbishop of Bombay. The congregation consists mainly of Goans (Goan-Portuguese), Anglo-Indians, Feringis and a few Europeans. The religious services are practically confined to Sundays and holy days. The religious instruction for the adults is provided along with the morning Masses. A catechism period is arranged in the afternoon and evening for the children. The Catholic community is self-supporting. The Methodists are the most active Christian organisation. The American Episcopal Mission has acquired some fine property in the Camp and neighbourhood including a large Church, a Hospital and important educational institutions. In the Church on Sundays there are religious services in English and Gujarati. On week-days, there are two prayer meetings. Active propaganda work is carried on through public preaching, distribution of tracts and the publication of the *Harshanad*, a Gujarati monthly with a circulation of over 600 copies. The educational institutions in its charge are a boys' high school, another one for girls—looking after nearly 500 children. There is also a theological college for the training of Indian Christian pastors with 65 students who undergo up to three years a course of study in all branches of theology, theoretical and pastoral. In connection with these institutions there are auxiliary associations like the Sunday School, the Epworth League (a society for social, philanthropic and religious work) and the Social Band (a musical and evangelistic society). A well equipped Hospital for women and children is also part of the mission organisation with an American lady doctor, an American nurse and three Indian nurses in charge. Normally 2,000 out-patients per year are treated and there is provision for fifty beds. The Indian Methodist community mostly resides in the Mission Compound, but a considerable number live in the railway quarters and other parts of the City. The adult workers are mostly teachers in mission institutions, a few are in domestic and railway service, and others are coolies.

Parsiism—The Census shows only 574 Parsis living in the City. The socially better off families are officers in State employ, others are liquor contractors, merchants and subordinates in Railway employ. There is one place of religious worship for the Parsis, although the community is shortly going to have a full fledged Atesh-behram and Dharmsala through the bequest of a rich Parsi contractor. There are three paid *mobeds* (priests). The dead are disposed of at the *dakhmas* at Majalpur, a neighbouring village. The local funds for the upkeep of the Aghiari and the *dakhmas* are under the control chiefly of the Bombay Parsi Panchayat. The community being small, there is no regular provision for religious instruction for the children.

Seminar for Comparative Religion—No account of the religious activities in the Capital is complete without some reference to the Seminar for the comparative study of religions. In 1916, His Highness the Maharaja Saheb established in connection with the local college a Chair of Philosophy and Comparative Religion and appointed Prof. A. G. Widgery, a Cambridge Graduate of distinction, who had also studied at Jena, to direct a research institute for the study of different religions. Under him, three Fellows were to be elected usually for one year, and suitable candidates for two or more years, one qualified in Sanskrit, one in Arabic and the third in Avesta, Pali or Philosophy. The work undertaken by the Seminar since that date has been in the direction (1) of preparation of Bibliographies of the historic religions ; (2) of construction of Chronologies for the purpose of the study of historical development and relationship of religions ; (3) of systematic surveys of religions, in which two volumes have been already prepared and will shortly be ready.—*The Comparative Study of Religions*, and *Religions and their Modern Tendencies* ; (4) of surveys of Hindu and Muslim Ethics, and (5) monographs on special subjects connected therewith. Already eight scholars have been trained in the institution and their published volumes form the Gaekwad Studies in Comparative Religions and Philosophy. In connection with this series, the co-operation of outside scholars, like Dr. Lingesh Mahabhagwat (Sankaracharya of Kurtkoti) have been also sought and obtained. Of the eight research students, three are Musalman, one a Japanese Buddhist and the

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rest are Hindus. In connection with this institution are to be mentioned two Journals, both quarterlies, the *Indian Philosophical Review* and the *Indian Journal of Sociology*. The first named has no official relation with the Seminar or the State, but the fact that one of its editors is Prof. Widgery accounts for its close association. During the four years of its existence, the Review has acquired a high standing. The Journal is of recenter origin and is supported by the State.

Apart from the literary activity of the Seminar, the State has encouraged through the Sanskrit Section of the Central Library the edition and publication of old Sanskrit, Prakrit and Apabhramsa texts with scholarly introductions and notes, under the name and style of the Gaekwad's Oriental Series. Under the editorship of the late Pandit Chimanlal Dalal, whose death was a serious loss to scholarship, this series acquired a high and even European reputation. The idea was conceived in 1914 by His Highness, at whose instance a careful and systematic search was undertaken of Jain and other *bhandars* (libraries) for rare and ancient manuscripts on religion, philosophy, architecture, poetics, astronomy, music, grammar and ritualism. Altogether 41 works have been planned of which 20 are published, 10 are under preparation, and 11 are still to be taken in hand.

172. Present-day tendencies in the religious sphere—The above account of the religious situation in the City of Baroda gives some clue to the present-day position of the great historical religions in the Indian mind. Everywhere the tendencies of religious unsettlement are apparent. Hinduism perhaps more than the other faiths, shows in its social side and in its religious practices increasing signs of disintegration. Temples are mostly in disrepair. *Bhajans*, *Kirtans*, and *puran katha* loom much less largely in the life of the present-day Hindu than did formerly. Perhaps the very individualised character of Hindu worship has helped this process. Also the too rigorous insistence on forms and rituals, the significance of which has come to be lost on the modern Hindu brought up without a knowledge of his ancient Sanskrit, has led to the serious depletion of true religious emotion. The present-day religion of the Parsis whose lives are becoming more and more of "an eclectic *ensemble*" half European and half Asiatic, also partakes of this tendency, although Navsari, where the bulk of our Parsis reside, is still the stronghold of orthodox *mobed*-ridden Zoroastrianism. Islam is more alive than either, and there are distinct signs that the immediate future will witness the inauguration of a great Jain revival. But the bulk of Gujarat Musalmans and Jains are still in the grip of Hindu influences. The average Jain is a believer in caste system and even Hindu gods claim a place—though subordinate to their Tirthankaras—in their worship. In regard to their attitude to the unclean castes, the Jains share to the full—and even certain sections of Musalmans and orthodox Parsis as well—the prejudices of the unredeemed Hindu.

(*a*) *Religious Nationalism*—But if the general evidences indicate that great ignorance of their religion at present exists among Indians, there is on the other hand a very strong and growing "sentiment" for the old faiths, which has been now reinforced by the political nationalism of the present times. Dr. J. N. Farquhar very aptly calls this feeling "Religious Nationalism". It is expressed generally in educated discussions in undisguised hostility towards what it calls the materialism of Western Civilisation. This spirit of antagonism is not entirely of recent origin. It perhaps began with Dayanand's violent disputations with Christian Missionaries and Muslim Moulvis, brought on as much by religious patriotism, as by the ignorant attacks of the latter on the cherished ideals of the Hindus. Since his time, Aryas,* Theosophists and Dharma Mahamandal propagandists have fanned the flame. Much of this feeling is ignorant and even insensate. For out of a hundred that come to religious gatherings and applaud the perfervid patriot, only one makes a sincere effort to study his own religion. The Brahmo Samaj has however consistently set its face against this extravagant *laudatio temporis acti*. As a result it has been reviled as pro-Christian, denationalised. Its success has been also seriously hampered by its tolerant and receptive attitude towards all religions. Formerly this violent religious chauvinism of the general body of educated Hindus was directed not only against Christianity but also Islam. Now the new orientation in politics has brought about a *rapprochement* with Islam. As a result, the Jain and Muslim are at present accepted with much good will, the Parsi also but perhaps a little more doubtfully. The Christian however is still barred as

* There is no suggestion in this statement that Aryaism is an anti-British movement. That charge has been effectively refuted by Mr. Blunt, *vide* U. P. Report 1911, pp. 135-136.

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the victim of alien ideals. As the Revd. C. F. Andrews points out in his *Renaissance in India*, this uprising of feeling in behalf of the traditional faith set itself in link with a general awakening of the East when the Russo-Japanese War resulted in the victory of an Asiatic race.

(*b*) *The Gandhi movement*—In Gujarat we are concerned with the recent developments of this upheaval associated with the name of Mr. Gandhi. This is not the time, nor is it within the province of this Report, to attempt an estimate of his life and work. The incidents of his life and his political aspirations are well known. In British India his political programme has been the cause of profound disagreement amongst the *intelligentsia*. In this State we are chiefly concerned with the religious and social implications of his movement, and in these respects, it is idle to ignore the fact that most of the people here have been immensely moved at least by his personal influence. With the vast majority of Gujaratis, he is regarded as a saint. Not the least tribute to the purity of his motive and the lofty sincerity of his character was contained in the recent judgment which has sent him for a political offence to incarceration. The special turn which his movement has given to the religious life of the people was to rescue it from antagonism towards Islam, and secondly to set men's minds towards the removal of the taint of untouchability and the uplift of the depressed classes. In its special attitude towards Christianity and its Founder, the Gandhi movement provides also a refreshing contrast to that spirit of bigoted intolerance which characterised the early stages of Hindu revivalism. His own genuine reverence for the Personality of Christ and the teachings of the Bible has done much towards softening the old bitterness. How far these consequences will be permanent, time alone can show. One wishes that the *entente* with Islam were founded less on the angry politics of the moment and more on the sincere recognition of the cultural affinities of the two great systems of Asiatic religion. Reports vary as to the results of the special campaign against untouchability. It is stated that in South Gujarat, where this part of the programme was seriously pursued, even the Dublas refused to have anything to do with Kanbis, after the latter decided to let in the Dheds to their houses. Within Baroda State, the movement is of much older date and has always had the active sympathy of the authorities. The Dheds are admitted into public offices and courts and taken into the subordinate ranks of the services. But the bar against them in schools and libraries still continues. As pointed out above, even the Parsis are at one with the orthodox Hindus in this matter. It is one of the ironies of the religious situation in Gujarat that Vaishnavism, which in other parts of India has concerned itself with the uplift of the depressed and the lowly, has here become the stronghold of obscurantism. Coming to the third point, its attitude towards Christianity, it is believed that the reaction of this new national consciousness will result in the development of an Indian Christianity. The endeavours made in South India and in Bengal towards this end have had only faint echoes amongst Gujarat Christians. Perhaps when a higher type of education has developed indigenous leadership amongst them and enable them to do without the leading strings of missionaries, then will be the time for work in this direction. "The Christianity of India," says Revd. E. J. Thompson, one of the acutest Christian minds that have been engaged on the modern Indian problem, "when it has sloughed its present apathy and mendicancy and poverty of manliness will help Western Christianity which has made so many mistakes to know God and Christ better. The Gospels teach a simplicity of life and of access to God which Western Christianity has overlaid . . . . . We can see and, seeing, rejoice that Indian Christianity will have at least a Vedantist tinge".* It is to that simplicity and along with it to that spirituality which Mr. Gandhi conceives to be the special heritage of India, to which he has exhorted his disciples to turn. But in his teachings there is also an unlovely austerity of mood which would rule out all secular cultural effort and all modern influences. This is sought to be justified by his followers on the ground that the urgency of moral reformation is so great that there is no time for ornamental activity.

(*c*) *Islamic and Jaina reforms*†—As in Hinduism, so also in other religions, "this mounting spirit of nationalism and community spirit" has allied itself with a general movement back to the origins, the spirit which underlies the over-

* Vide his *Rabindranath Tagore*, p. 101.

† I am much indebted for this section to Prof. A. G. Widgery for letting me take notes from his forthcoming book, *Religions and their Modern Tendencies*.

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laying tradition, the present practices and evils of the old religions. There is talk of the "Spirit" of Islam, the "Spirit" of Jainism. Islamic reform has generally concerned itself with the task of freeing the religion of Mahammad from the excrescences that have clung to it through contact with Hinduism. The reforming activity has therefore concerned itself mainly with the removal of the taint of man-worship, caste-system and idolatrous tendencies. In Gujarat these tendencies are seen in the orthodox hostility towards Pirāna sectaries, the growing desire for knowledge of Urdu, and the anxiety to provide through its means religious instruction for Musalman children. Jaina reform has taken mainly the shape of a powerful literary movement in which it has been able to secure the co-operation of learned Jain *Munis* like Vijaya Dharmasuri and Nyaya Vijayaji. Kavi Rājchandra Rāvjibhai of Kathiawad was the first modern reformer to wake up his community to the need of serious reform. As a result, the last ten years have seen much literary and propangandist activity. The chief methods employed are sectarian conferences, institutions for training of *Sadhus* and priests, hostels for students, newspapers in the vernaculars and in English, the publication of literature and particularly of ancient sacred texts, the establishment of associations like the Bharat Jaina Mahamandal with headquarters at Lucknow and the International Jain Literature Society and the Mahavir Brotherhood in London to engage the sympathy and collaboration of European *savants*; and lastly religious reform evidenced in the desire to cleanse temple management of the evils that have crept into it, and also to return to the pristine form of Jainism. Through the Syādmahāvidyalaya and Yasovijaya Jain Pathsala both at Benares, they have tried to establish a "Jain Aligarh". The Central Jain Publishing House at Arrah (established ten years ago) and the Jain Mitra Mandal at Delhi are the chief literary agencies. The religious reform is primarily aimed to free Jainism from the incubus of Hindu doctrines such as Sankara's *moksha*. It also aims at the destruction of the power of ignorant *Sadhus*. The consecration of the Jain temple at Simla in 1919 was a remarkable triumph for the reformers. "The unprecedented success of the occasion was due to the absence of *sadhus* and professional *pandits*."

(*d*) *Credal Unity*.—One of the most important consequences of these new stirrings is the desire, more prominently expressed in Hinduism than in the other religions, for a credal unity or at least for harmony between the sects. In its fight with the clear-cut, positive theisms of Christianity, Islam and the Arya Sāmaj, orthodox Hinduism finds its weakest point in its vagueness and lack of definition. As a result, it is slowly but surely giving way.* Thinking Hindus have realised the truth of this statement. The establishment of the Bhārat Dharma Mahāmandal as a central organisation in defence of orthodox Hinduism in 1902 was a bold step to "gather together the whole of the Hindu people in a single organisation, partly in self-defence, partly for further instruction in religion."† The publication of two excellent text-books—one advanced and the other elementary—on Hindu religion and ethics by the Board of Trustees of the Benares Central Hindu College in 1916 registered a considerable advance towards the formulation of an unsectarian Hinduism on the basis of which religious instruction could be given to all Hindus. These books have been translated into Gujarati and have attracted much attention. In regard to the sect divisions and conflict of doctrines much has been done in the direction of harmonising. Two problems confront Hinduism—the problem of reconciling the three ways of attaining salvation—*Jnana*, *Bhakti* and *Karma*—over which sects have wrangled for centuries, and secondly the problem of coordinating an intimate personal theism, which is the religion of the common man, with the intellectualist monistic position. With regard to the latter question as Pandit Sitanath Tattwabhushan, one of the greatest living Vedantists says, "Rational religion seems possible only on the acceptance of the doctrine of unity in difference. Dualism by separating the subject and object of worship makes communion impossible. Monism, by denying their distinction, makes worship unmeaning. Not only *bhakti* and *seva*, but even *jnana* is impossible under the monistic theory: for *knowledge* also is based on the distinction of the knower and the known." A great deal of the religious thought of the decade has been devoted to these problems. Two remarkable books—the *Gita Rahasya* of the late Bāl Gangādhar Tilak and the *Gitanjali* of Rabindranāth Tagore—both of which in

* The Imperial Table VI for all India now available proves that Brahmanic Hinduism has declined, while Islam, Christianity and the Arya Samaj have all increased largely at the expense of their disorganised and amorphous rivel.

† *Vide* p. 316, Farquhar's *Modern Religious Movements in India*.

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Gujarati translations have influenced Gujarati thought profoundly—are contributions towards this synthesis. Liberal Hinduism seems also to have come into a closer understanding. A Theistic Conference held generally every year in connection with the Indian Congress brings together Brahmo and other theistic workers. Enlightened Aryas also recognise the need for common organisation with other reforming sects. On points of difference with the Brahmos, they seem at present to emphasise that Dayanand's insistence on the authority of the Vedas was based also on that other doctrine that although they were repositories of true and eternal knowledge, the interpretations of them (including Dayanand's own) were not authoritative nor binding.* In regard to such practices as *homa*, the Aryas insist that they are merely of hygienic significance. It will be remembered that Keshavchandra Sen in his Nababidhan section of the Brahmo Samaj also introduced the symbolising of *homa*, the waving of lights (*arati*), *bhajan*, *kirtan* and other Vaishnavic details into the Brahmo worship.

(*e*) *Demand for an educated priesthood.*—One last point has to be mentioned before this chapter is concluded. Along with the growth of religious patriotism, there has also developed the desire for religious instruction and an educated priesthood. In para. 171, we have seen in the religious organisation of the City how the Jains and the Muslims are more alive than the Hindu in the matter of religious instruction of their young. With the latter, the cry for religious instruction is little more than mere moral text books. Unless the Hindus are agreed on what minimum basis the religious instruction can be given, nothing further can be done. In this respect the Arya Samaj must be given the credit for showing the lead. Their *gurukul* system of education with the intimate personal influence of their teachers on the taught is an admirable adjunct to their religious propaganda. As to religious ministration, with the progress of education it is obvious that the educated classes among the non-Brahmans have begun to resent the usurpation by one class, and that not the most deserving, of priestly privileges. In certain parts of India, notably in Mahārāshtra a movement has been initiated from among these classes to do without the Brahman in religious ceremonies. In Madras, the relations between the Brahman and the non-Brahman have now become so embittered as to attain the dimensions of a social problem of the first magnitude. In Gujarat we hear only faint echoes of this controversy, partly because the average Gujarati Hindu does not bother much about the kind of person for his religious ministration, and partly also on account of the fact that here the social habits of the two sections—Brahman and non-Brahman, or at least the dominant classes amongst the latter—do not show so sharp a cleavage as in the Deccan or South India. But still the cry for a trained priesthood is real and finds much utterance in educated circles in Gujarat. In pursuance to this desire, this State, always to the fore in social legislation, has responded by enacting the Hindu Purohit Act. The Bill was first published for public criticism in 1913, and after two revisions in the light of public opinion was finally passed into law on the 30th December 1915. The Act evoked a storm of opposition amongst the Brahmans, for one of its most important provisions was that any Hindu irrespective of his caste could become a qualified Hindu *purohit*. Amongst the non-Brahman Gujaratis, the Act did not also evoke much enthusiasm at first, but it is now being gradually appreciated. Its many safeguards as shewn below prove that although bold, it is a very statesmanlike piece of legislation. In a Hindu State, where the rulers and the ruled are of one religion, the question of government interference in the people's religious affairs can be discussed "from a platform to which there can be no parallel in British India." The Act is so important that I feel no hesitation in giving the following extract from the State Administration Report of 1915-16, which explains its main provisions :

"As the preamble states, the object of this Act is to have properly qualified Purohits for the performance of religious rites and able to expound their true significance, so that the Yajamanas may feel satisfied that their spiritual interest is safeguarded. In order to carry out this object, the Act provides for the grant of letters of authority to act as duly qualified Purohits to persons who may have passed the Hindu Purohit's examination, who may have passed in Yajnik subjects or in any standard of the Dharmashastra of the Shrāvan Mrs Dakshinā examination, or who may be specially considered fit by Government. Any Purohit, not so authorized, officiating at any religious rite as defined in the Act, is liable to be prosecuted and tried before a Magistrate specially empowered by Government, and sentenced to a fine not

* In this attitude, they deny that belief in the Vedas is merely Book Revelation. The interpretation being progressive, the Vedas come to be regarded not as books written at any one time but as eternal knowledge.

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exceeding twenty-five rupees. Several important exceptions have been provided for in order to facilitate the working of the Act. The first exception is in favour of unqualified Purohits over twelve years of age at the date of the commencement of the Act. The second allows unqualified Purohits who are not residents of the State and who may be accompanying outsiders, to officiate for them provided that their stay does not exceed one month. The third permits an unqualified Purohit to officiate in a place where no qualified Purohit, who can by custom officiate for a particular community, is available in the locality or within a certain radius, or where owing to the simultaneous performance of a number of ceremonies there is not a sufficient number of qualified Purohits. The fourth relates to the performance of funeral obsequies or any other religious rite that may be specially excepted by Government. The last is in favour of a person who for any special reason may be specially exempted from the provisions of this Act by Government. The period allowed by the Act to persons who are desirous of carrying on the profession of the Purohit, for qualifying themselves in 6 years from the date of its publication. This provision is expected to give sufficient time to the younger generation to acquire the necessary qualifications. Another important feature of the Act is that any Hindu may qualify himself as a Purohit irrespective of his caste. But it does not follow that Yajamanas will have to employ Purohits of any other caste than the one which ordinarily provides Purohits to them. The Act ends with an important safeguard that the legality of any ceremony will not be affected because of its having been performed by an unauthorized Purohit. The Act will apply only to that part of the State to which Government may declare it to apply by a notification in the Adnya Patrika or to a particular community. The result of this measure will be watched with interest."

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SUBSIDIARY TABLE I.—General Distribution of the Population by Religion

Religion and Locality	Actual Number in 1921	Proportion per 10,000 of the population					Variation per cent. increase (+) or decrease (—)				Net variation 1881—192[illegible]
		1921	1911	1901	1891	1881	1911—1921	1901—1911	1891—1901	1881—1891	
1	2	3	4	5	6	7	8	9	10	11	12
Hindu											
Baroda State ..	**1,742,160**	**8,193**	**8,349**	**7,922**	**8,850**	**8,480**	+ 2·7	+ 9·71	— 27·63	+ 15·37	— 5·[illegible]
Central Gujarat ..	532,313	8,687	8,406	8,202	8,879	8,926	+ 7·8	+ 11·45	— 28·76	+ 6·40	— 8·[illegible]
Baroda City ..	75,200	7,940	7,873	7,783	7,897	7,890	— 3·9	— 3·17	— 12·13	+ 9·39	— 10·[illegible]
North Gujarat ..	818,550	9,089	9,039	8,939	9,055	9,034	+ 8·8	+ 0·81	— 25·01	+ 11·41	— 8·[illegible]
South Gujarat ..	160,263	4,708	6,474	4,215	8,518	5,707	— 26·2	+ 71·53	— 53·47	+ 65·82	— 2·[illegible]
Kathiawad	155,834	8,752	8,732	8,662	8,686	8,621	+ ·1	+ 3·63	— 4·06	+ 23·17	+ 22·[illegible]
Amreli	135,903	8,907	8,877	8,810	Separate	8,771	+ ·1	+ 5·41	Separate	figures not	+ 24·[illegible]
Okhamandal ..	19,931	7,824	7,861	7,868	figures not available	7,822	— ·2	— 7·07	available		+ 8·[illegible]
Animist											
Baroda State ..	**163,077**	**767**	**568**	**903**	**124**	**465**	+ 41·3	— 34·52	+ 490·37	— 70·59	+ 60·6
Central Gujarat ..	15,118	247	516	670	217	154	— 50·1	— 16·21	+ 137·69	+ 50·48	+ 49·47
Baroda City ..	117	12	20	51	1	..	— 41·2	— 62·45	+ 5,788·89	+ 125	+ 2,825
North Gujarat ..	263	3	..	17	11	1	+26,200	— 99·93	+ 19·21	+ 1,290·59	+ 209·41
South Gujarat ..	147,450	4,332	2,530	4,595	421	3,176	+ 73·7	— 38·50	+ 927·04	— 85·28	+ 61·47
Kathiawad	129	7	..	5	....	..	....	— 100	....	....	....
Amreli	129	8	..	6	Separate	..	....	— 100· 0	Separate	figures not	....
Okhamandal ..	....	..	..	..	figures not available	..	....	....	available		....
Musalman											
Baroda State ..	**162,328**	**763**	**791**	**845**	**781**	**801**	+ ·9	— 2·50	— 12·57	+ 7·86	— 7·23
Central Gujarat ..	50,942	831	834	840	774	791	+ 4·0	+ 7·94	— 16·29	+ 4·65	— 1·7
Baroda City ..	15,194	1,604	1,732	1,809	1,793	1,793	— 11·7	— 8·33	— 10·11	+ 9·03	— 20·65
North Gujarat ..	54,760	608	632	667	625	639	+ 4·1	— 5·49	— 18·95	— 8·62	— 13·56
South Gujarat ..	22,819	670	692	847	759	800	— 1·7	— 8·82	+ 4·93	+ 5·44	— ·[illegible]
Kathiawad	18,613	1,045	1,061	1,140	1,151	1,208	— 1·5	— 4·68	— 4·68	+ 16·42	+ 4·5
Amreli	13,189	864	893	967	Separate	1,038	— 3·3	— 3·40	Separate	figures not	+ 2·41
Okhamandal ..	5,424	2,129	2,072	2,069	figures not available	2,110	+ 3·0	— 6·81	available		+ 9·[illegible]
Jain											
Baroda State ..	**43,223**	**203**	**214**	**247**	**208**	**214**	— ·5	— 10	— 4·06	+ 7·74	— 7·48
Central Gujarat ..	8,398	137	136	160	127	126	+ 4·9	— 7·46	— 3·11	+ 8·35	+ 1·[illegible]
Baroda City ..	2,296	242	222	218	213	208	+ 4·0	— 2·56	— 8·44	+ 11·94	+ 3·[illegible]
North Gujarat ..	26,671	296	324	376	309	325	— 1·1	— 14·19	— 7·33	+ 5·54	— 16·[illegible]
South Gujarat ..	2,422	71	83	89	68	58	— 12·6	+ 3·24	+ 23·05	+ 30·90	+ 45·[illegible]
Kathiawad	3,436	193	197	188	158	168	— 2·2	+ 7·56	+ 15·04	+ 14·70	+ 38·9
Amreli	3,344	219	220	213	Separate	188	— ·6	+ 8·34	Separate	figures not	+ 43·21
Okhamandal ..	92	36	59	59	figures not available	59	— 38·7	— 7·41	available		— 33·[illegible]
Parsi											
Baroda State ..	**7,530**	**35**	**39**	**43**	**34**	**37**	— 5·3	— 5·40	+ 2·47	+ 1·08	— 7·24
Central Gujarat ..	124	2	2	2	2	2	+ 13·8	+ 3·81	— 23·91	+ 12·20	+ ·[illegible]
Baroda City ..	574	61	56	57	50	46	+ 2·3	— 5·87	+ 2·41	+ 18·78	+ 17·14
North Gujarat ..	56	1	1	1	....	1	— 27·3	— 22·22	+ 167·57	— 24·49	+ 14·[illegible]
South Gujarat ..	6,761	199	214	252	233	259	— 5·8	— 5·40	+ 2·04	— 0·05	— 9·14
Kathiawad	15	1	2	1	1	1	— 48·3	+ 45	+ 66·67	— 20	....
Amreli	15	1	1	1	Separate	1	— 6·2	— 20· 0	Separate	figures not	+ 87·50
Okhamandal ..	....	..	5	..	figures not available	3	— 100·0	....	available		— 100·0
Christian											
Baroda State ..	**7,421**	**35**	**35**	**39**	**3**	**3**	+ 3·0	— 6·35	+ 1,090·56	— 16·21	+ 862·52
Central Gujarat ..	5,660	92	103	126	1	1	— 6·3	— 11·06	+ 11,812·28	— 25·97	+ 7,260·65
Baroda City	1,048	111	76	75	43	58	+ 40·1	— 3·36	— 53·57	— 17·78	+ 70·96
North Gujarat ..	187	2	4	..	..	..	— 46·3	+ 1,350	— 50	+ 9·09	+ 325
South Gujarat ..	498	15	2	1	1	..	+ 730	+ 39·53	+ 79·17	+ 84·62	+ 3,730·77
Kathiawad	28	2	..	4	1	1	+ 250	— 86·67	+ 361·54	— 45·83	+ 16·7
Amreli	1	..	..	3	Separate	2	....	— 97·96	Separate	figures not	+ 95·0
Okhamandal ..	27	11	3	4	figures not available	2	+ 285·7	— 36·36	available		+ 575·0
Others											
Baroda State ..	**783**	**4**	**4**	**1**	....	..	+ 6·7	+ 619·61	+ 82·14	+ 100	+ 2,696·[illegible]
Central Gujarat ..	245	4	3	..	....	..	+ 24·4	+ 1,876	+ 100	+ 400	+ 24,400
Baroda City ..	283	30	21	7	3	..	+ 38·0	+ 184·72	+ 84·62	+ 1,200	+ 9,533·33
North Gujarat ..	91	1	..	..	....	..	+ 213·8	+ 866·67	— 75	+ 140	+ 1,720
South Gujarat ..	159	5	5	1	....	..	— ·6	+ 841·18	....	— 100	+ 1,887·50
Kathiawad	5	..	8	..	....	1	— 96·5	....	....	— 100	— 54·5
Amreli	4	..	9	..	Separate	..	— 97·2	....	Separate	figures not	+ 100·0
Okhamandal ..	1	..	..	..	figures not available	4	....	....	available		— 88·[illegible]

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SUBSIDIARY TABLE II—Christians—Number and Variation

Natural Division	Actual Number of Christians in					Variation per cent				
	1921	1911	1901	1891	1881	1911—1921	1901—1911	1891—1901	1881—1891	1881–1921
1	2	3	4	5	6	7	8	9	10	11
Baroda State	**7,421**	**7,203**	**7,691**	**646**	**771**	**+ 3·02**	**— 6·35**	**+ 1,090·56**	**—16·21**	**+ 862·52**
Central Gujarat	5,660	6,039	6,790	57	77	— 6·27	— 11·06	+ 11,812·28	—25·97	+ 7,250·65
Baroda City ..	1,048	748	774	504	613	+40·10	— 3·36	+ 53·57	—17·78	+ 70·96
North Gujarat ..	187	348	24	48	44	—46·26	+1,350	— 50	+ 9·09	+ 325
South Gujarat ..	498	60	43	24	13	+730	+ 39·53	+ 79·17	+84·62	+ 3,730·77
Kathiawad ..	28	8	60	13	24	+250	— 86·67	+ 361·54	—45·83	+ 16·7

SUBSIDIARY TABLE III—Religion of Urban and Rural Population

Natural Division	Number per 10,000 of Urban population who are							Number per 10,000 of Rural population who are						
	Hindus	Muslimans	Animists	Jains	Parsis	Christians	Others	Hindus	Muslimans	Animists	Jains	Parsis	Christians	Others
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Baroda State ..	**7,731**	**1,569**	**111**	**398**	**134**	**46**	**11**	**8,313**	**553**	**939**	**152**	**9**	**32**	**2**
Central Gujarat with City ..	8,065	1,494	34	271	34	85	17	8,790	716	286	104	1	99	4
North Gujarat ..	7,880	1,464	1	640	4	6	5	9,331	437	3	228	..	1	..
South Gujarat ..	6,206	1,579	869	211	1,079	41	15	4,462	520	4,903	48	54	10	3
Kathiawad ..	7,385	2,258	..	347	3	6	1	9,198	649	10	143	..	..	..

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SUBSIDIARY TABLE IV—SECTS OF HINDUISM CLASSIFIED ACCORDING TO THEIR NATURE

Class	Name of Sect	1921	1911
1	2	3	4
I.	**Movements of Comprehensive Reform**	**717**	**604**
	Ārya Samāj	645	598
	Vedadharma	34	....
	Brahmo Samaj	35	6
	Prārthana Samaj	3	....
II.	**Movements checked by defence of orthodoxy**	**167,958**	**209,277**
	(a) *Recent*	*2,257*	*68*
	Rādhāswami	254	....
	Sreyas Sadhak Adhikari Varga	2,003	68
	(b) *Modern*	*165,701*	*209,209*
	Kabir Panth	30,861	34,954
	Bij Panth	131,455	170,645
	Dadu Panth	1,849	2,401
	Uda Panth	142	511
	Nirat Panth	455	59
	Mota Panth	146	123
	Nakalanki	101	47
	Satya Keval	362	135
	Saji Sawai	330	334
III.	**Guru Worshipping Cults**	**21,101**	**19,049**
	Kuber Panth	1,229	437
	Gopināth Panth	2,438	629
	Santrām ,,	395	1,148
	Parnámi ,,	4,984	6,854
	Patwāla ,,	21	429
	Ravi Saheb	126	51
	Rāmde Pir	10,768	8,409
	Bhābhāram	1,140	1,092
IV.	**Orthodox Sectaries based on Vedic and Pauranic Hinduism.**	**1,329,813**	**1,239,267**
	Saiva or Smarta	*385,641*	*350,495*
	Sakta	*84,988*	*86,264*
	Vaishnava	*859,184*	*802,508*
	Rāmānuji	108,995	104,987
	Rāmānandi	478,239	434,679
	Mādhavāchāri	325	71
	Vallabhāchāri	159,163	171,460
	Swāminārāyan	56,997	53,721
	Rādhāvallabhi	3,515	1,566
	Miscellaneous and Unspecified Vaishnavas	51,950	36,024
V.	**Sects on the borderland of Hinduism and Islam**	**8,015**	**5,714**
	Pirāna Panth	6,648	3,630
	Nayakāka	1,367	2,084
VI.	**Sects tending towards Animism**	**212,849**	**214,946**
	Ajepal	198	185
	Khijadia Panth	180	358
	Devibhakta*	198,306	201,283
	Hari Bava, Tulsi upasak and other degraded Vaishnava sects	14,138	12,976
	Vadvālā	27	144
VII.	**Hindu Unspecified and others**	**2,387**	**8,893**

* The Census only showed figures for Saktas and Devi-bhaktas; no separate figures for the latter being obtainable, 70 per cent. of the total census strength have been safely assumed to be Devi-bhaktas, the rest being included under Class IV as true Saktas.

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CHAPTER V

AGE

PART I

General Observations

STATISTICAL DATA

Subject	TABLES		
	Imperial	State	Subsidiary
Age—State Summary	VII-A	....	....
" —By Divisions	VII-B	....	....
" —City of Baroda	VII-C	....	....
" —Talukas	....	VI	....
Annual Age Periods by Divisions	....	VIII	....
Age, Sex and Civil Condition of selected Castes	XIV	....	....
Annual Age Periods by Religions	....	IX	....
Immigrants by Age-Periods	....	XV	....
Emigrants by Age-Periods	....	XVI	....
Age Distribution of 100,000 of each sex by Annual Periods (Crude Returns)	....	....	I
Do. Corrected	....	....	I-A
Age Distribution by five-years groups—four censuses per Sex and Division (Crude Returns)	....	....	II
Do. Corrected Returns for 3 Censuses	....	....	II-A
Age Distribution by Religions (Crude Returns)	....	....	III
Age Distribution in certain castes per Sex	....	....	IV
Proportion in certain castes of Children under 12 and of persons over 60 to persons aged 15–40	....	....	IV-A
Proportion of Children under 10 and of persons over 60 to those aged 15–40 ; also of married females : in the Divisions	....	....	V
Do. In main religions	....	....	V-A
Variation in Population at certain age periods	....	....	VI
Reported Birth-rate by Sex and Natural Division	....	....	VII
Reported Death-rate by Sex and Natural Division	....	....	VIII
Reported Death-rate by Sex and Age in decade and in selected years	....	....	IX
Reported Deaths from certain diseases per mille of each sex	....	....	X
Infantile Mortality by Natural Division	....	....	XI

173. Reference to Statistics—The above summary of the statistical data utilised for this part may seem formidable to the reader. But they consist of two sets of figures. The first deals with the results of the Imperial Tables VII and XIV on which Subsidiary Tables I-VI are based. The second is concerned with the analysis of figures of Births and Deaths supplied by the Department of Sanitation in the State. Imperial Tables VII and XIV are concerned also with Sex and Civil condition which will be dealt with in separate chapters. The selection of castes for Table XIV was made in this census on the same principles as in the last : representative communities were chosen from the different strata of society.

174. Scope of the First Part—This chapter is divided into two parts. In Part II, Mr. Vaidyanathan will give the results of his actuarial analysis of the Age-Returns on the lines of the Age Reports written in connection with the general Indian Census by the late Sir G. F. Hardy and Mr. Ackland. Part I will therefore be restricted to such general observations as arise from a study of the crude age-returns. The corrected figures will be only utilised in such sections where, *e.g.*, in regard to the mean age, they are necessary or helpful to the discussion. The scope of this part is further restricted by the fact that in Chapter I which is of administrative interest, we have already discussed in sufficient detail the bearings of the movement of the population on the age-constitution of the State as a whole, as well as of the different *prants*.

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175. Inaccuracies of the Record—The recurrence of incorrect age returns is one of the hardy " decennials" of the Indian census. The instruction to the enumerators in this regard were simple and precise enough :—

" Column 7 (Age).—Enter here the number of years each person has completed. For infants less than one year old, enter the word ' infant'. "

What was required was the cardinal number of years completed, while the usual practice of the Indian is to refer to the ordinal number of the year of his current age. This is a fruitful cause of many mistakes even in the most educated circles in this country. Then there are the inaccuracies due to the heaping at multiples of 10 or 5, so often referred to in previous Census Reports. This feature is found in the age-returns of almost every other country, but it is particularly accentuated in India. These accidental errors are due to ignorance. There are other errors or rather falsifications which are due to deliberate misrepresentation, social custom or superstition. Mr. Vaidyanathan discusses these in detail in Part II and there is no need to repeat what is there written. But the point of superstition may be elaborated a little. The fear of evil eye—*nazar* or *chashm i-bad*—may be mentioned as the main reason why the mother of a healthy well-grown child for instance overstates his age. For similar reasons an old man is sometimes apt to understate his age. Dr. Jivanji Modi in a recent paper read before the Bombay Branch Royal Asiatic Society refers to the old-world superstition against numbering that prevailed amongst the ancient Hebrews and the Hindus. The Hitopadesa says that "nine things—age, wealth, thefts in one's house, counsel, sexual intercourse, medicine, charity, austerity and disgrace—must be carefully concealed". The Gujarati saying—" *eni ghadio ganai chhe*"—seems to be an exact transcript of "one's days being numbered"; it is reminiscent of the tradition common among the old races that numbering should be avoided, because if it " showed a high number, it drew ' evil eyes ' which brought about subsequently a fall in the numbers."

176. Systematic errors in the Age-Return—These general circumstances must be operative in this State also ; usually the errors are due to ignorance or else to pure forgetfulness. The ordinary Indian even if he is educated does not have much occasion to remember his age. He—and certainly not his womankind—does not usually celebrate his birthdays ; and the old practice amongst the richer classes of renewing one's horoscope with annual *Varshaphals* (prediction of events of the year at or before its beginning) has fallen into desuetude. The horoscopes indeed are necessary for the new born child's naming and other purposes ; but the practice of their yearly renewal has gone into disfavour with the people's waning faith in astrology. Misrepresentations are also numerous—not entirely due to the people but also sometimes to the timidity or carelessness of enumerators themselves. One of the main reasons, I believe, why the age-returns of Musalman females are so uneven is due to the Hindu enumerator deliberately avoiding enquiry in this respect and trusting to hearsay, or their own imagination, to fill up the necessary details. Apart from these general causes, in this State there are two special reasons which may or do influence people deliberately to misstate their own ages or those of their family. The Compulsory Education Act first prescribed 6 years as the limit of freedom from school-going age. In the last decade, this limit was raised to the 7th year ; the upward limit for compulsion is at present 13 years (complete) for boys and 11 years (complete) for girls. Similarly under the Infant Marriage Prevention Act, the minimum age for a girl to marry is 12 years, and for a boy 16. One would imagine in the event of a deliberate falsification of ages that the parents or guardians of married girls below 12 and married boys below 16 would pass them off as of these ages and upwards. Also to avoid compulsory education, similar devices will result in heaping of returns at 6 for both sexes and 12 or 13 for girls and 14 or 15 for boys. 15 is not a good year to select for detection of such misstatements, because as a multiple of 5, there is usually a great heaping at that year. But the actual returns for 6 and 13 for girls are illuminating. In 1911, when the age-limit itself was 6, the heaping was shifted to the lower age. In that census therefore, the figures for the 6th year (proportioned to 100 mille) was 2,097 and 2,021 for boys and girls respectively. In 1921, these proportions rose significantly to 2,586 and 2,565. For the 12th and 13th year, in case of girls and 16th year among boys, similar

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heapings are observable in 1921. In 1911, evidently these factors of misrepresentation were not so actively in operation, as will appear from the marginal table. The intermediary ages which ought according to normal Indian conditions to be unpopular, like 9, 11, 13, 14, 16 show greater heaping than before particularly the 12th year, in both sexes. This also shows, apart from a tendency to falsify at certain ages, that as people are becoming more generally accustomed to compulsory education provisions, the years of schooling, 6 to 16, are being more correctly returned.

Year of age	Proportion to 100,000 of Population of			
	Boys		Girls	
	1921	1911	1921	1911
9 ..	1,981	1,253	1,912	1,186
10 ..	3,813	2,445	3,349	1,902
11 ..	1,529	1,132	1,590	983
12 ..	3,619	2,786	3,034	2,374
13 ..	1,690	1,473	2,010	1,563
14 ..	1,637	1,478	1,731	1,334
15 ..	3,235	3,268	2,797	2,928
16 ..	1,736	1,681	1,548	1,546

177. Graphic representation of inaccurate returns.—The diagram given in Part II along with para. 209 shows how the returns at individual ages are vitiated by these inaccuracies.

This diagram points to a curious depression in the age period 1-2, a similar depression before and after each age in the quinquennial series from 20 years and upwards, and a certain fondness for even numbers in preference to odd. These and other characteristics are commented on more in detail in the Second Part of this chapter. A detailed analysis is therefore unnecessary but it must be here observed that according to a true record of ages, there should have been a more uniform progression of the series, the steps of the diagram should have descended gradually from its steep height at the first age through the process of the years.

178. Index of Concentration—In the American Census, a measure is made use of by which the extent of the error due to abnormal use of round numbers in age-returns is analysed and compared with different places and with different grades of people. This is known as the Index of Concentration. (*Vide* Whipple *Vital Statistics*, pp. 169, et seq.). The number reported as multiples of 5 between the ages 23 to 62 years inclusive is first computed, and its proportion to one-fifth of the total number returned of this age-period is then calculated. This ratio is known as the Index of Concentration. In this State, the age returns of the population have been compiled for individual ages by divisions and religions. The accompanying table summarises some of the indices of concentration calculated according to this method for the State. The census of 1901 shows indeed the best results. Mr. Dalal congratulated himself on the greater accuracy of returns in that census. The next census registered a very decided fall in the standard of accuracy in this respect; and although in this census, there is only a very slight improvement, we must remember that in this matter, this State, and presumably the rest of India, are far behind even the more backward countries of Europe like Russia and Bulgaria. A comparative statement is extracted from Whipple, p. 170 and given below in the margin. Even the American Negroes show a far better standard of accuracy than our Parsis, who are educationally the most advanced community in the State. Even the City which with its large literate population was expected to show better results fails in this respect. Perhaps the selection of age-periods for this measure is not suited to India. Here the educational advance has not been of such long standing as to enable very old people to remember their ages. Mass education of the general type is only a matter of the last thirty years and its earliest beneficiaries cannot be if they are alive now, much older than 45; so that if we chose an age-limit, say from 9 to 39, inclusive perhaps the results will be more satisfactory. The Index of Concentration calculated on this basis for the year 1921 in this State is 252 for both sexes, and for 1911 it was 268.

Index of concentration for	
1901 Census	156
1911 ,, ...	367
1921 ,, (both sexes) ..	363
,, ,, (males) ..	358
,, ,, (females) ..	367
,, (Baroda City males) ..	347
,, (Baroda City females)	383
,, (Parsi males) ..	227
,, (Parsi females) ..	277
,, (Jain males) ..	304
,, (Jain females) ..	370
,, (Musalman males) ..	374
,, (Musalman females) ..	400
,, Animist males ..	315

Country	Date	Index of Concentration
England and Wales.	1901	100
Belgium	1900	100
Germany	1900	102
France	1901	106
America (Native White).	....	112
America (Negroes) ..	....	153
Russia	1897	182
Bulgaria	1905	245

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179. Correction of Errors of Age—Prof. Vaidyanathan explains the method of correction of accidental errors in age adopted by this State in this census. Briefly it may be stated that individual ages adjoining quinary ages were subjected to a series of differences from which a corrected figure for the quinary group was obtained and then figures for the individual ages in the group by drawing through a curve after the manner of the Graphic Method described in Newsholme's Vital Statistics (p. 266, third edition). The age-returns for both sexes in 1921 were subjected to this process*. Two graphs showing the corrected figures for Males and Females are given later on in the Second Part. The principal reason why this method has been preferred to the Bloxam is because it enables one, while the other does not at any rate to the same extent even after doubling the process of averages, to have very accurate figures for the age-groups at the ends of life.

Apart from these processes, an elementary correction is got from merely taking the figures of quinary groups into consideration. By this means the effect of plumping on favourite years is considerably minimised. In the marginal statement the first two age-groups are seen to deviate largely from the truth. In the middle-age groups, the deviation is slighter up to the 50th year, beyond which the percentage of errors rises until it reaches the maximum in the highest years of life.

Age-Returns for Males proportioned to 10,000 of the sex

Selected Age groups	Corrected	Crude
0—5 ..	1,413	1,242
5—10 ..	1,343	1,411
10—15 ..	1,204	1,229
15—20 ..	920	847
20—30 ..	1,677	1,565
30—40 ..	1,481	1,514
40—50 ..	1,021	1,063
50—60 ..	610	694
60—70 ..	245	323
70 and over	86	112

Whatever the defects, and however we may use them, the age statistics are indispensable as there is no better material available which gives an indication of the longevity of people, and their birth and death rates. Their errors notwithstanding, the crude age-returns from census to census afford besides, valuable bases for comparative study of the factors in the movement of population, because the margin of error at each census may be assumed to be constant.

180. The Mean Age how calculated—One of the uses to which corected figures of age can be put is the means they afford of calculating the mean age of the population. "Mean age" is simply the average age of persons living at a census and must not be confused with mean duration of life. Where corrected returns for individual ages are available, there is no difficulty in calculating their mean age. The corrected figures for each age are multiplied by the years of that age, and the sum of these results divided by the total population gives the mean age of the population. Where such elaborate figures are not available, an approximation on the basis of the method used by the French Census Report of 1891 has been tried. According to this method—the population at the end of each quinary group is determined, *viz.*, total of persons 5 years and over, 10 years and over and so on. "The sum of these totals multiplied by 5, the difference of the age-divisions, and raised by $2\frac{1}{2}$ times the number of persons dealt with (*i.e.*, in this case the total population) gives the number of years lived. The mean age is obtained by dividing this last number by the number of persons dealt with."†

181. Possible inferences from Variation in Mean Age—The mean age can only be said to coincide with the mean duration of life when births and deaths are exactly equal. As the Census Commissioner's Note points out :—

" In a growing population with a large number of children the mean age of the living will be less than in a decadent one where the children are relatively few in number. The mean age therefore explains nothing in itself, but is useful in respect of the questions which it suggests and this fact must be borne in mind when dealing with the variations in the mean age in different localities and communities."

* For the purposes of his Actuarial Report, Prof. Vaidyanathan has also smoothed the age returns of 1911. The corrected figures for 1911 and 1921 and for 1901 (obtained by Bloxam's Method) are given in Subsidiary Tables I-A and II-A.

† *Vide* p. 390, India Administrative Volume, 1901. For a proof of this process, see pp. 264, 265, Bengal Census Report, 1911. A variant of this method giving almost identical results was also used by which individual age-returns up to 10 were multiplied by, $\frac{1}{2}$, $1\frac{1}{2}$, $2\frac{1}{2}$, and so on up to $9\frac{1}{2}$ and then the quinary group figures were multiplied by the mean age of each group, *i.e.*, $12\frac{1}{2}$, $17\frac{1}{2}$, $22\frac{1}{2}$, and so on up to $97\frac{1}{2}$; the results were then summed and the mean age was found by dividing this total by the total population.

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It is difficult therefore to draw any conclusions from variations in mean age. A low mean age may mean however a high birth rate with a large number of children and a comparatively low mortality rate for the earlier ages. It may also mean high death-rate among adults and old persons, pointing to low longevity generally in the population. A high mean age will mean either a low birth-rate with deficiency of children, and large numbers of adults and very old persons ; and it may also indicate high mortality in the earlier ages. Under these circumstances, famine conditions are not ordinarily expected to affect the mean age much, because they destroy either the very young whose low ages matter very little or the very old whose numbers are few. Diseases like plague and influenza which attack the people in their prime, and healthy ages generally, would presumably tend to reduce the mean age.

182. Mean Age by Sex—The mean age has been calculated for both sexes for the State, as well as different divisions separately ; and it has been also found for the different religions. The mean age by sex shows if the calculations are correct for females, that either the women are more long-lived than men or that the males preponderate amongst the children. Since 1901, the females shew a higher mean age than males. In 1921, the sexes almost approach equality in this respect. This is due perhaps to the mortality conditions of the decade being particularly unfavourable to females. The question of mortality rates by sex will be considered in the next chapter. The margin shows a higher mean age for females, and this is so particularly in the City and North Gujarat. The excess in the City is noteworthy, especially when we remember that the proportion of females to 1,000 males in the city is only 837, as against 936, for the general population. But throughout the three censuses, the females have shewn a higher mean age than males. This is due for one thing to their greater longevity. The proportions for the higher ages for the two sexes are thus shewn in the margin. Throughout the two decades, women aged 40 and over are in larger proportions than men. It is not surprising therefore that the mean age is higher in the former sex in the city.

Year	Mean age for	
	Males	Females
1901 ..	23·6	23·8
1911 ..	22·7	22·8
1921 ..	23·96	24·04

Age-Period	Proportion to 10,000	
	Males	Females
1921.		
40-60.	1,890	1,945
60 and over ..	494	665
1911.		
40-60.	1,905	1,931
60 and over	474	685
1901.		
40-60.	1,992	2,159
60 and over ..	375	608

183. Mean Age by Religion—For discussion of mean age by religions localities and censuses, it is perhaps better to confine our attention only to males : the age-return for females is notoriously inaccurate, and even after smoothing, it cannot be said that the mass of errors, accidental or otherwise, has been completely eliminated. The marginal statement which has been prepared from Subsidiary Tables III and V-A, compares therefore the mean age for males in each main religion, with the proportion of children under 10 years and of old persons over 60 to the adult population aged 15-40. The Animists have the largest proportion of children, as well as the smallest proportion of old persons. Usually it is supposed that Animists with high birth-rate and low longevity will have a low mean age, and that Hindus, more prolific than Musalmans (at least in this State), should have a lower mean age. In this census, the Animists have shewn the lowest mean age of all religions. The Musalmans have a higher mean age than the Hindus, owing to the lower proportion of children and the higher proportion of long-lived persons amongst them in comparison to the Hindus. The Jains have always had a high mean age in the State. Not only is the proportion of children fewer ; but the number of old persons is also larger in proportion to their total than the other religions (except Musalmans). So both factors combine in raising the average age of the living amongst the Jains.

Religion	Mean Age	Proportion of Children per 100 persons aged 15—40	Proportion of persons over 60 per 100 aged 15—40
Hindu ..	23·99	68	11
Musalman	24·87	65	14
Animist ..	22·27	80	8
Jain ..	25·89	57	14

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184. Mean Age by Localities and Censuses—In regard to mean age by localities and censuses, a marginal statement is appended, which is prepared from Subsidiary Tables II and V. The mean age for the State has increased since 1911; this is explained by the higher proportion of old persons in the community. The proportion of children has also increased in the decade. The corrected figures for males of all ages below 10 show an increase from 284,467 in 1911 to 303,294 in this census. The aged population has also increased from 28,260 to 36,674. The middle age groups 15-60 have also increased, the age period 10-15 has also shewn very large increase. In consequence, an increase in mean age is expected.* The increase in the average age of the living is shared by all the parts of the State. The increase for the State is 1·25 years. Where this is exceeded as in Kathiawad, the influence of adult immigration is apparent. Baroda City shows the highest mean age of all parts of the State. This is as much due to the low proportion of its children, as to the large proportion of adult immigrants in the City's population. South Gujarat with its comparatively prolific Animistic population shows a lower mean-age than the State. North Gujarat, however, continues in this census as in the last to have the lowest mean-age in the State, due to the depletion of its middle-aged population through emigration. The figures for migration, as calculated in the Subsidiary Table IV of Chapter I show a decrease in emigration and an increase in immigration. That explains the increase of 1·19 years in the mean-age of that division. But it is still low compared to the rest of the State. The effect of influenza and plague in the decade everywhere has been to keep the mean age low. In Kathiawad, where influenza exacted the heaviest toll, the mean-age is not high in view of the high proportion of its children.

Division	Mean age		Proportion of children per 100 persons aged 15-40		Proportion of persons over 60 to persons aged 15-40	
	1921	1911	1921	1911	1921	1911
State	23·96	22·71	69	60	11	8
Baroda City ..	26·14	24·55	48	44	11	10
Central Gujarat.	24·95	23·61	65	56	12	8
North Gujarat	23·29	22·10	71	61	10	7
South Gujarat.	23·53	22·25	71	68	11	10
Kathiawad ..	23·50	22·06	75	61	12	9

185. Longevity by religions—The discussion of mean age leads naturally to the consideration of longevity. In the marginal table attached to the preceding paragraph, the proportion of persons over 60 to persons aged 15-40 is given. If there was a normal decade, without any epidemic disturbances, these ratios would have been a fair index of longevity. Influenza as we know was particularly disastrous to the middle age-groups and, among religions, it seems that Hindus were specially attacked. Perhaps Animists were equally severely exposed, but death registration among them is very defective. Taking the other religions, a marginal statement is given where in the death-rate in 1918 (showing the incidence of influenza) is given per religion ; and the proportion of long-lived males is also shewn in each community. From this table, it would appear that the Parsi is the most long-lived community in the State, followed by Jains and Musalmans. The Parsis of course live in better and cleaner surroundings than the others ; but it must be also remembered that it is the usual practice for all Parsis whose homes are in this State to spend the greater part

Religion	Death rate per mille in 1918	Percentage of males over 60 to			
		Total male population		Males aged 15—40	
		1921	1911	1921	1911
Hindu ..	70	4·3	3·5	11	8
Musalman	50	5·4	4·3	14	10
Jain ..	22	5·5	4·4	14	10
Parsi ..	38	10·6	8·0	31	24
All Religions	66·5	4·4	3·6	11	8

* The mean age for the State in 1911 was low compared to that of India generally which was 24·7, and that of British Gujarat which was 24·36. If these calculations are right, then presumably this State in view of its being then more of a giver than a receiver in adult migration, had a comparatively lower mean age than the surrounding British territory. The balance having turned in its favour in the decade, the mean age has risen.

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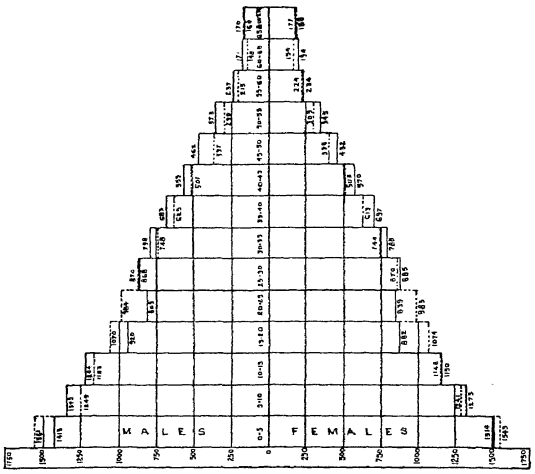
of their working lives elsewhere, and to retire finally in their homes in Navsari and other places. As a result the proportion of old men in the community residing in this State is large relatively. The birth-rate is diminishing also amongst them, the proportion of children is fewer in consequence. The influenza epidemic carried off a large number of Parsis ; it is not surprising therefore that the proportion of old men to middle aged men is very large compared to other religions. Musalmans and Jains, perhaps to a smaller extent, are also trading communities like the Parsis and the able-bodied among them emigrate elsewhere for work or trade. The birth-rate generally rules low as is expected amongst a community, a large proportion of whose able-bodied males is away from home. These three communities have also a lower death-rate than Hindus, as indicated by their greater immunity from epidemics. The Animists, who are not included in the above table, because their age-returns and vital statistics are very defective, are known to be a very short-lived community. They have a very high death-rate although the reported death-rate in 1918 was only 9·5 per mille.

186. General Age Distribution—The broad features of the age-constitution of the people have been already presented in the second part of Chapter I in connection with the general discussion on the movement of population (*vide* paras. 62, 63 *et seq.*). There the analysis was based on the crude age-returns as disclosed by the census. We have now access also to the corrected age-returns, as well as to the investigations of the State Actuarial Expert who has found out the normal age-curve of the population. The marginal table and diagram show the crude as well as the corrected age-distribution, compared with the normal age-distribution of the people. In the statement it is seen that the smoothing of the crude returns has resulted in the healthy age-periods, 15-40, being in a rather stronger position proportionately to the population, than what the crude figures made out at first. The reason for the discrepancy between the two is probably that persons aged between 35-40 are often apt to pass off as 40 and above, and there is in consequence a heaping at 40 and at heigher multiples of five. The heaping is particularly noticeable amongt females of that age. As to the other age-periods, the corrected figures show a greater proportion of children and a lower ratio of old persons than the crude returns.

Age Period	Age distribution proportioned to 1,000 of Population		
	Crude 1921	Corrected 1921	Normal
0—10 ..	268	277	280
10—15 ..	120	118	115
15—40 ..	390	408	430
40—60 ..	175	162	142
60 and over ..	47	35	33

Diagram showing corrected age-distribution compared to normal age distribution.



NOTE :—This column has been erected on corrected returns. The normal age-distribution is shewn by dotted lines.

The normal age-distribution arrived at by actuarial methods explained in the Second Part of this chapter, shows an age-constitution which makes for a healthier death-rate, and a slightly higher birth-rate normally, than was actually the case in the decade preceding the census. The age-periods least susceptible to high mortality *viz.*, 10—40 constitute 55 per cent. of the population. The number of children aged below 10 is normally 28 per cent. of the population ; while the corrected returns make out their ratio to be 27·7. Thus assuming the death-rate for that age-period to be normal, the birth-rate in this decade was slightly below normal. Finally it may be noticed that the corrected ratios, as may be naturally expected, are nearer to the normal than the crude ones.

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187. Age Distribution by Localities—Taking by divisions and making use of crude returns, the marginal statement has been prepared. Comparing the different age constitutions of the *prants* with the normal age-distribution in the State we find that in regard to the age-period 15-40 which is of the greatest importance to the birth-rate, Kathiawad and North Gujarat show the largest deviations from the normal. Instead of the normal 43 per cent. Kathiawad has only 37·6 and North Gujarat 38·7. In the one case, heavy mortality and in the other this cause as well as emigration, have depleted the ranks of the able-bodied of these two areas. In every part of the State, the proportion of the aged (60 and over) is larger now than the normal. The child population under 10 is also about the same as the normal, except in Central Gujarat where the birth-rate seems to be seriously in defect. The serious depletion of the age-period 15-40 in all the parts of the State, due to the conjoint influences of epidemics and migration, is seen even more vividly by comparison with the proportional figures for that age-period in 1911. The margin gives the necessary ratios for 1911. Making allowance for crudeness of the age-returns, we see that everywhere the normal average of 43 per cent. is exceeded, except in South Gujarat, where there is a lower figure. All that decade, 1901-1911, was marked by a severe plague epidemic particularly in South Gujarat. We have pointed out that plague, like influenza, attacks the healthy ages most. But even then its effect was not so deadly as that of influenza. In the section under public health in the first chapter the progress of influenza in this State was sufficiently detailed. Here it will be enough if we tried to isolate the influenza factor. The influenza deaths in 1918 formed 55 per cent. of the total registered deaths of that year. In Central Gujarat influenza claimed 52 per cent. of the total mortality and in South Gujarat, 55 per cent., but in North Gujarat and Kathiawad, the influenza deaths were 59 and 66 per cent. respectively. And it is in these two last named divisions that the proportion of adult persons (15-40) is the fewest.*

Age Period	Proportion to 100 of population			
	Central Gujarat	North Gujarat	South Gujarat	Kathiawad
0 –10.. ..	25·5	27·5	28·1	28·3
10—15.. ..	11·7	12·3	12·1	12·5
15—40.. ..	39·0	38·7	39·5	37·6
40—60.. ..	19·0	17·2	15·9	16·2
60 and over .	4·8	4·3	4·4	5·4

Division	Proportions of persons aged 15—40 to 100 persons of all ages in 1911
Central Gujarat.	44·5
North Gujarat .	44·4
South Gujarat ..	41·7
Kathiawad ..	43·4

188. Subsidiary Table IX.—The incidence of influenza is also brought out vividly by considering the ages at death. Subsidiary Table IX gives the death-rate from all causes for the decade for select age-groups—*viz.*, under 1 year, between 1-5, 5-10, 10-15, 15-20, 20-30, 30-40, 40-50, 50-60 and lastly for the ages 60 and over. These rates are further compared with ratios of individual selected years. The years taken are 1912 (following on the famine year), 1914, a normal year, 1917, the year of plague, and 1918, the year of influenza and famine. If we take only the average mortality rates for the age-periods 15-20, 20-30 and 30-40 and compare them with the corresponding ratios in the plague and influenza years, we will see the extent of the dreadful havoc which these fell epidemics played on the healthiest and, from the point of view of population, the most important ages. Perhaps the most miserable part of the whole story is how these two epidemics, and particularly influenza, attacked the women of these ages far more than they did the men. Plague from the peculiar nature of its infection is a house disease, and the stay-at-home Indian woman is more liable than the male members of her family to fall a victim. Influenza also affected the woman particularly adversely. Ordinarily, the death-rate amongst women of these ages is higher on account, among other things, of the perils of child-birth. Influenza very considerably aggravated the dangers of child-bearing and must have thus been the indirect cause of numerous fatalities in child-birth amongst females.

* I regret that statistics regarding ages at death for influenza epidemic are not avaliable. These would have helped the discussion very much.

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The marginal statement given here shows how appalling has been the toll of lives taken by influenza and plague. The statement gives the figures for 1914, and we find for instance in the age-periods 20-30 and 30-40, the mortality rate in 1918 was five times as great as in 1914.

Age Period	Average of Decade		1914		1917		1918	
	Male	Female	Male	Female	Male	Female	Male	Female
15-20 ..	10·9	13·5	7.1	8·1	18·9	21·2	31·8	36·8
20-30 ..	16·2	17·7	10·1	11·0	23·3	25·0	55·5	61·8
30-40 ..	20·3	21·3	13·4	13·7	29·8	33·1	61·5	69·7

189. Variation by Age-periods—Subsidiary Table VI gives the variations in the population by certain age-periods. The total increase of 4·6 per cent. since 1911 is the mean of differing ratios of variation of which the following are the chief, namely an increase of 6 per cent. of the child population under 10 years, a very large increase of 43 per cent. amongst young people aged 10-15, a further increase of 9 per cent. amongst persons aged 40-60 and lastly a large increase of 23 per cent. amongst aged persons of 60 and over, these increases being set off by a loss of 7 per cent. among middle-aged persons aged 15-40.

(*a*) *Child population : 0-10*—The increase in the child-population points to a higher birth-rate. That the latter half of the decade was wholly adverse to the birth rate is proved by the fact that children under 5 have decreased by 12·9 per cent. since 1911. These are the survivors of the children born since 1916. But the total age-group 0-10 has increased proving that the increase in the age-group (5-10) is very considerable since 1911. As a matter of fact, the increase in that age-group is 32·5 per cent., showing that the births in 1911-16 must have been largely in excess of the normal. The age-group (5-10) in 1911 represented the births of infants in 1901-6. The birth rate shrank under the shadow of the great famine and the succession of lean years that followed the census of 1901. There is an increase of 6 per cent. in the age-period (0-10) in the State. This increase is however not uniform. In Baroda City there is actually a decrease of 2·1 per cent. North Gujarat shows an increase of 9·6 per cent. South Gujarat hardly shows any increase—only 0·1 per cent. Kathiawad and Central Gujarat have 5 and 6 per cent. respectively.

(*b*) *The age-period 10-15*—It is remarkable that it is in this age-period that the largest increases are registered. The mean for the State is 42·5 per cent. ; and the increases vary from 53·6 per cent. in North Gujarat to 14·5 per cent. in South Gujarat. Even the City decadent as it is shows an increase of 17·9 per cent. in this age-group. Central Gujarat and Kathiawad have 49·7 and 46·2 respectively. The children in this age-group must have been born in the years 1906-1911. As pointed out already, the years 1906-11 and 1912-16 were good average years and favourable to the growth of population. The frost and the famine of 1911 were only interludes which did not disturb over-much the equanimity of these almost normal ten years.

(*c*) *The other variations*—The other age-periods will require less detailed treatment. The effect of influenza on the age-period (15-40) has been discussed. As a consequence, this period shows a decrease of 7 per cent. The largest decline is in Kathiawad (13·5 per cent.), followed by Baroda City (10 per cent.) It is a feature of this declining city that in this age-period, the decline has been continuous since 1891. The older age-periods do not call for much remark. 60 and over illustrates the oft-quoted remark that famines attack the extremes of life, at least so far as the famine of 1900 is concerned. In 1901, there was a decrease of 40 per cent. in this group. In 1911, the rebound happened and an increase of 20·9 was registered. In 1921, in spite of the famine of 1918, there was an increase of 23 per cent. The famine of 1918 was also comparatively powerless as we have found out above in affecting the population at the other end of life, because the child-population (0-10) has increased by 6 per cent. But that there was an undoubted shrinkage is shewn by the decrease of 12·9 per cent. in the number of children (0-5) compared to 1911 and the proportion of such children to 10,000 of the total population has been reduced from 1575 (corrected) in 1911 to 1464 (corrected) in 1921. The depression is however very slight compared to 1901, when the ratio dropped down to so low as 977 (corrected).

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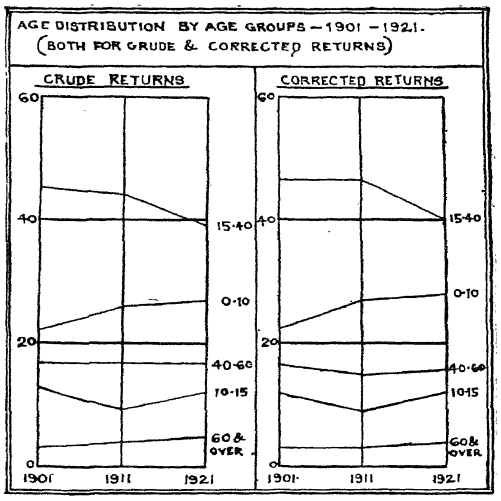
190. Traces of the famine of 1900—On pp 179-80, two graphs are given wherein the smoothed age-returns for males and females are illustrated. Mr. Vaidyanathan refers to the very significant dip in both these curves about the age-period (20-25) and correctly concludes that they are the survivors of the people who were born in the quinquennium 1896-1901. The births had shrunk into unprecedentedly low dimensions in these years on account of famine and disease. The life history of this group may be further illustrated in the marginal statement which has been compiled entirely from corrected figures. A comparison of the male figures (proportioned to 100,000) for the age-periods of 0-5, 10-15, and 20-25 for the years of 1901, 1911 and 1921 shows how the traces of famine have persisted through these two decades. The italicised figures in the margin illustrate strikingly how the depression in 1901 in the first age group is repeated in 1911 in the age-group (10-15) and finally in 1921 in the age-group, 20-25. The table also illustrates the rebound in 1911 in the age-group 0-5, which is continued in 1921 in the age-group 10-15.

Year	Age-groups		
	0—5	10—15	20—25
1901 ..	*9,376*	12,563	10,033
1911 ..	15,206	*9,556*	10,315
1921 ..	14,131	12,036	*8,092*

191. Variation in the age-distribution since 1901—The marginal diagrams prepared from crude and corrected returns give the variation in the age-groups. The variation in the distribution of age-group 0-10, it must be mentioned, depends ordinarily on the changes in the proportion of age-group 15-40, from census to census. If it be found that the proportion of married females aged 15-40 to the total population of that age-group is fairly constant, then the two curves for ages 0-10, and 15-40, should correspond fairly closely. In fact, as we see in the diagram, this is not so, for the proportion at 0-10 is gradually rising since 1901 while the reverse is the case at 15-40. The explanation is found in Subsidiary Table V, where the proportion of children under 10 to married females aged 15-40 is seen to be gradually rising from 122 in 1901, to 145 in 1911 and 167 in 1921 ; and this rise is *pari passu* with the rising ratios (to the whole population) of 222, 270 and 277 found for the children under 10 since 1901. These latter ratios are graphically illustrated in the margin. In regard to the dip at 15-40 in 1921 this is due to the excessive mortality at healthy ages in the last 4 years of the decade more than to anything else ; and occurring as it did almost at the end of the decade, it did not presumably affect the birth-rate to any appreciable extent.



192. Sundbärg's Types of population—We may now pass on from these considerations to see how far the age-constitution of this State fits in with the scheme of Sundbärg's types of population. According to this Swedish statistician, in all western countries the number of persons aged 15-50 is normally half of the total population and such variations as occur do so mostly in the other two age-groups, namely 0-15 and 50 and over. He further held that the mortality rates for the first and the last groups were about equal and that therefore any variation in the age-constitution of the general population did not affect the death-rate. As to the types of population, Whipple introduces some further modifications which are interesting. Sundbärg distinguished three types of population :—*progressive* where the first age-group (0-15) preponderated over the last (50 and over) ; *stationary* where the first group was about one-third of the total population ; and *regressive*

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where the last group preponderated over the first. Whipple adds two other classes to suit the cases of countries which give off, and those which receive, population. " If the percentage of persons between 15 and 50 years of age is much less than 50, it indicates that the place has lost by emigration and this may be termed the *secessive* type ; while if the percentage of persons between 15 and 50 years of age is greater than 50 it may be termed the *accessive* type." (Whipple, *Vital Statistics*, p. 179.)

The age constitution constructed on the basis of these age-groups is given in the margin,—the normal with the corrected being shown side by side. Fom this statement it appears that the proportion for the first age-group is the same in the normal, as in the corrected distribution of the population of the State. Normally the middle group is larger and the last group is smaller, than what is the case now. According to Sundbärg, this age-constitution reveals a rather progressive type of population.

Age-group	Corrected ratios for 1921	Normal ratios
All ages ..	100	100
0—15 ..	39·5	39·5
15—50 ..	51·1	52·0
50 and over.	9·4	8·5

It must be remembered however that Sundbärg laid down his proposition on the basis of European populations which alone came under his observation. But having regard to the high birth rate in this country owing to the universality of marriage, all Indian populations--even the most truly decadent—will seem progressive by Sundbärg's standards. Thus the age-constitution for 1901 showed that the first age-group in spite of famine conditions constituted 35 per cent. of the population. The age-distribution of the City of Baroda, a truly decadent place, gives a ratio of 30·9 per cent. for the first age-group. The second group in the City constitutes no less than 58·8 per cent. which shows the very large proportion of immigrants, who reside there for purely exigent reasons leaving their families at home.

The second part of Sundbärg's theory as to mortality rates does not seem to be borne out by the normal experience of this State. From the life table prepared for this State (attached to Part II of this Chapter), the marginal statement has been prepared which shows that the death rates in the first and last groups are by no means equal. The old people suffer from a much higher ratio of " risk " than the first group in regard to whom it must be remembered that its mortality rate is the resultant of the high mortality rate amongst infants and the very low death rate for the young persons aged 5-15 which is one of the healthiest periods of life.

Age-Period	Normal Mortality rate per mile per annum
0—15 ..	60·056
15—50 ..	25·391
50 and over ..	76·858

193. Age-distribution of Natural Population—The statistics regarding the age-distribution of immigrants and emigrants are of great interest, for they show how far in the adult ages their influence is operative in the distribution of population. The immigrants to the State have been specially sorted into the age-groups 0-5, 5-15, 15-40, 40-60 and 60 and over. By the courtesy of the Bombay Superintendent, I am also able to have the figures of Baroda-born emigrants to certain adjacent districts in Bombay Presidency and States distributed according to these age-periods. As these emigrants form 69 per cent. of total emigrants their age-distribution has been accepted as the basis for the total number of emigrants * and by this means the age-distribution of the natural population has been found. In the first place the age-distribution of immigrants and emigrants may be compared in the marginal statement with that of the general population. These proportions are further compared with the male migrant age distribution for Madras and United Provinces as estimated by Mr. Ackland in the Actuarial Report of 1911

Age Period	Total Population	Immigrants 1921	Emigrants 1921 (estimated)	Male migrant age-distribution in Madras. and U.P. (Ackland's estimate in 1911)
All ages ..	100	100	100	100
0—5 ..	12·9	5·0	5·9	0
5—15 ..	25·9	13·7	16·4	5
15—40 ..	39·1	50·5	49·5	68
40—60 ..	17·5	24·0	22·7	24
60 and over ..	4·6	6·8	5·5	3

* It is admitted that the estimated age-distribution for emigrants is defective. The situation in contiguous areas is not the same as in remoter places where the age-distribution of migrants must perforce be far less natural.

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(*vide* p. 163, India report of 1911). Mr. Ackland assumes that there are no migrants in the age-period 0-5. In the Chapter on Birthplace, the features of permanent migration are discussed. Here it will be sufficient to point out that permanent migrants to and from the State are not a very considerable portion of the total volume of migration. But it is important to remember that these true migrants bring or take away their whole families with them, as for example in the settlement of new villages in Chorashi and East Kadi. In these circumstances therefore, the child population does form a part, though a very small one, in the age-constitution of true migrants. Of course a great proportion of migrants to and from contiguous territory is as has been pointed out the result of bridal exchanges between adjacent villages of different jurisdiction. In their case, the children are born usually in the bride's parental home and appear as "migrants" in the territory of the father-in-law. If we are able to ascertain the age-constitution of migrants of remoter places, it is possible that it will not be very different from Mr. Ackland's estimate.

Having ascertained the age-distribution of migrants, let us see how the natural population fares in regard to age. The marginal table gives ratios for natural population born and enumerated in the State, and also for the total natural population. The latter estimate is of course only approximate, figures for overseas emigrants being not available. These proportions are further compared to those for the total population—actual and normal. In view of the problematical character of the estimated age-distribution of emigrants, the age-distribution in the natural population may be neglected. But we are on surer ground in regard to the natural population born and enumerated in the State. In their case, the proportions for the age-groups 0-5, 40-60 and 60 and over approach the normal more closely than the actual age-distribution. On the other hand the age-periods 5-15, and 15-40 in the natural distribution each show larger deviations from the normal than the actual. In the former case, this is due perhaps to natural causes, and perhaps to a smaller extent to immigration. The defect in the age-period 15-40 is largely due to the effect of influenza, which even the gain in migration which the decade has indicated was not able to make up.

Age Period	Total Population		Natural Population born and enumerated in State	Natural Population
	Actual	Normal		
All ages ..	100	100	100	100
0—5 ..	12·9	15·6	13·9	13·1
5—15 ..	25·9	23·9	27·4	26·2
15—40 ..	39·1	43·0	37·6	38·9
40—60 ..	17·5	14·2	16·7	17·3
60 and over ..	4·6	3·3	4·4	4·5

194. Age Distribution in different Castes—Subsidiary Table IV contains the ratios calculated on the absolute figures of Imperial Table XIV. The castes have been selected on the principle of representation of the different strata of society. In the Imperial Table XIV these castes are arranged alphabetically. In the Subsidiary Table, they are re-arranged on the basis of the social grouping which the Risley scheme of 1901 had fixed for the so-called Scytho-Dravidian tract of Gujarat and Maharashtra. At the head of the social scale selected Brahman castes have been shewn with writers, the militant groups, the traders, agriculturists, artisans, the labouring class, etc., following. The representative early tribes and untouchable groups bring up the rear. The most important age-group being the years 15-40, we shall take the mean for the State and compare the various social groups according as they exceed the general average or are below it. The age group 0-5 is also similarly treated. The marginal statement gives the figures for the principal groups. The State-ratio for 15-40 is exceeded principally by the militant and agriculturist

Caste-groups	Age Periods—Proportioned to 100 of total	
	15—40	0—5
State	**390**	**129**
Brahmans	390	106
Militant groups ..	407	115
Writers	371	126
Bards and Actors ..	382	117
Traders	396	107
Agriculturists ..	400	123
Craftsmen and Artisans	390	123
Labouring class ..	383	139
Herdsmen	377	124
Personal Servants ..	393	118
Early Tribes.. ..	377	159
The Untouchables ..	379	145
Musulmans with foreign strain ..	390	115
Local Converts ..	376	127

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groups. In both these classes, the proportion of males is preponderant showing gain by immigration. Traders show a higher average than the mean for the State. That is possibly due to their superior economic environment, and comparative freedom from epidemics. The influenza mortality and also plague were known to be particularly severe to the poorly housed, ill-fed people of the lower strata, who had little vitality left to withstand the onset of disease. These classes—labourers, untouchables, herdsmen, early tribes—show therefore very low proportions of the able-bodied among their number. The Musalmans with foreign strain have a larger proportion of this age-group than the local converts, showing that there is a greater number of immigrants amongst them than the latter ; and this is further supported by the fact of their having a much lower proportion of children aged 0-5 than the local converts. These latter show a rather low ratio for the able-bodied because two great communities amongst them—Vohora and Memon—are known to send out large bodies of their able-bodied men as emigrants on trading enterprise. As to the age-group 0-5, it may be generally mentioned that the proportions are high mainly in the lower grade and more primitive communities—and this is so inspite of their having low ratios in regard to their able-bodied group. This shows generally high fecundity amongst them. The Brahmans, Vanias, and economically better classes generally have shown low proportions for the child population.

195 Birth-Rate and Fecundity—*By Localities and Religions*:—Birth rates calculated on the total population are no sufficient indication of the fertility of the people, as the number of very young and of very old persons is reckoned in the calculation, although they do not contribute anything to the natural increase in the population. Where the crude birth rate is of use it is mainly for the purpose of comparison between different communities whose age-distribution and sex-composition may be roughly assumed to be equal. It is also useful, like density, if calculated for a long term of years, for the purpose of examining whether a community is declining or otherwise. The crude birth-rate, from the data it is based on, therefore often times shows a steep rise soon after a famine which has carried off the young and old from the population. The proper index of fertility is to calculate the proportion of births to the number of females of the child-bearing ages, provided the births are correctly registered. We have however found that the births are more unsatisfactorily registered than deaths. According to the estimate we have made in para. 59, the registered annual births are out of the truth by about 56 per cent. Under these circumstances any calculation of corrected birth-rates on the above basis will be futile; but a fair idea of fertility by localities, religions and censuses is afforded by the proportion of children under 10 to the total of married women aged 15-40.

A marginal statement has been prepared on this basis which may be studied with advantage. The child-bearing age-limits have been taken in accordance with the usual practice of Indian Censuses to be 15 and 40 years. The limits in Western countries are 15 and 45. In this country, it is assumed that the menopause occurs a little earlier than the forty-fifth year, just as the capacity to produce children is antedated a trifle earlier than 15. But I have found from the results of my sex-enquiry and also from consultation with local medical opinion that the later limit of 45 years may very well be kept for India also. On this basis the fecundity rate has been also calculated in the above table. The same table has the figures for localities and religions shewn together ; figures of births are not available by religions.

Localities and Religions	Per 1,000 persons.		Proportion of children under 10 to 100 married females	
	Ten years births	Children under 10	Aged 15—40	15—45
State	**279**	**268**	**167**	**148**
Central Gujarat ..	283	255	157	138
City	211	211	132	119
North Gujarat ..	259	275	172	152
South Gujarat ..	308	281	170	152
Kathiawad ..	346	283	183	162
Hindu	Not available.	267	165	146
Animist		310	205	182
Musalman		254	156	138
Jain		225	150	134
Parsi		198	158	130

NOTE—This table has been compiled from unadjusted ages. The births have been proportioned to the average population of the decade. The other ratios are on present population.

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The defectiveness of birth-registration * is plainly indicated in this table by a comparison of the proportion of births with the proportion of children under 10. In North Gujarat, this proportion is actually less—which cannot be, as the number of children under 10 at a census are obviously the survivors of the children born in the previous ten years. In the City the birth-rate and the natural increment appear to be about equal, but this is, as shewn already in Chapter II, Part II, due to a number of births amongst families normally residing in the City happening elsewhere. On the whole, the highest fertility is in evidence in Kathiawad, which as we know is also subjected to the heaviest mortality. The City shows the lowest birth-rate as well as the lowest fecundity. Taking by religions, the highest productiveness is among the Animists. Musalmans show lower fertility than Hindus, and Jains even lower than Parsis. Regarding Musalmans, it was stated in the last report that their inferior prolificness was owing to " the inactive and secluded life which their females live in their *zananas*". But this cannot be correct. The secluded inactivity of the Musalman females is much more in evidence in other parts of India, like the United Provinces and Bengal, where the purdah is stricter. But there their prolificness is greater. The reason for the low productivity amongst Baroda Musalmans is due to the fact that people of foreign strain amongst them are mainly immigrants with few females with them and the local converts contain such communities as Vohoras and Memons, the adult male members of whose families are mostly away on business, and leave their wives behind. The births are therefore fewer in consequence. Imperial Table XIV shows that in these two communities, there are only 4,867 married males to 6,765 married females, aged 15 to 40 ; while the reverse is usually the case with the other communities, or the general population.

196. Variation in Fecundity since 1901—In comparing rates of fecundity by localities and religions, we have taken the proportion of children under 10 to 100 married females aged 15-40 as the test. Subsidiary Tables V and V-A also give variations in this proportion since 1901. The figures show that since 1901, the proportion of children under 10 to married females of the child-bearing ages has steadily gone on increasing from 135 to 145 in 1911 and 167 in 1921. In 1891, the figure was 162. This proportion—calculated only on the absolute figures as disclosed at one census—is a fair enough criterion for fecundity comparisons in regard to communities or localities in the same census. But to compare the situation from census to census, it is not exactly a correct test. The children under 10 are the survivors of the births of a decade. The births occur in fairly equal annual waves and are not subject to great fluctuations ; and the deaths in that age-period also are fairly constant. The famines only affect the first half of that age period, if they do at all ; and when they do, the very light mortality-rate of the second half makes up for famine losses, and the net effect is comparatively small. The population of the middle age-group (15-40) is on the other hand subject to great fluctuations in death-rate. Sudden onsets of epidemics may thin away their ranks considerably ; and if the decennial census happens soon after such depletion, the chances are that the proportions of children calculated on the residue left of this adult population should be very misleading. The rates so calculated fail to represent the real volume of births in the preceding ten years. For instance, let us recall the peculiar circumstances under which influenza affected the birth-rate of the last decade, in only three months out of its 120 ; and these three months were towards the end of the period. Eight and a half years' births having taken place, it was not expected that influenza in spite of its heavy toll, would appreciably affect the birth-rate of the decade. But the census of 1921 showed a depleted female population of the child-bearing ages, on account of the recency of the epidemic. The consequent shrinkage in their numbers therefore would naturally raise the proportion of the children in relation to them. A correcter indication of the variation in fecundity rate from census to census will be found by calculating the proportions on averages of the respective decades. For each decade, the mean number of children under 10, and of married women aged 15-40 should be found, and the proportion between them calculated. By this means, the effect of disturbing factors

* Subsidiary Table VII gives the Reported Birth Rate (calculated on the 1901 population) by divisions per each year of the decade. In view of the defective registration the figures are not analysed here.

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may be normalised or at least mitigated. In that way the statement in the margin has been prepared for four decades since 1881. From this table we see that this proportion remained constant for two decades after 1881 ; in the decade 1901-11 owing to the effect of the famine having thinned away the child population, the survival rate (and not the fecundity rate), among children declined. In the latest decade, the survival rate has increased, but it is very difficult to say whether the fecundity rate has increased since 1891. As a matter of fact, the reader must be warned that the variation in these ratios is a complex of many factors, of which fertility is only one among others almost as important, namely mortality among children, the general longevity of the community, the death-rate among adults, and the degree of error in recording ages particularly amongst children.

Decade	Proportion of children under 10 to married females aged 15-40 calculated on average of decade
1881—1891	150
1891—1901	150
1901—1911	140
1911—1921	155

In the last Census Report, the conclusion was arrived at that there was a general increase in birth-rate in this State since 1881; and this conclusion was based on the age-returns at 0-1 from census to census. The age-returns at that age are notoriously inaccurate, and it is unsafe to take them, crude and unadjusted as they are, as the basis for any conclusions. Secondly, even if they do show larger proportions from year to year, improvement in maternity methods and decline in infant mortality are sufficient explanations. From the crude-age returns it appears that since 1891, the proportionate figures for 0-1 have usually fluctuated between 300 to 400 per 10,000 of each sex. In 1901, the famine reduced the infant population terribly, and there were only 145 male and 156 female infants per 10,000 of each sex. The 1911 figures show 394 and 416. But the 1921 ratios on the other hand are lower being only 308 and 331. If these were taken as the basis, one would conclude that births have decreased in this census. On the other hand, we have reasonable grounds for inferring from Subsidiary Table V that births or at least the survivors amongst the births have increased since 1911 proportionately to the total population as also to married females aged 15-40. Thus the method of comparing variations of fertility in time, either by proportioning the number of children to adult females of the child-bearing ages or by taking into account the returns for the age-period 0-1, is not very satisfactory. If births were correctly registered, the number of births proportioned to the total population would have really given a fairer criterion for comparison in this respect. But as birth registration is very defective, we have to fall back upon the number of children under 10 and find out its proportion to the total population in the different censuses. On that basis the proportions since 1891 have varied as marginally noted. The figures for 1891 are based on unadjusted figures and those for subsequent years are based on corrected age-returns. By comparing the number of children to the whole population it is possible to eliminate the difficulty above pointed out of differing mortality-rates for different age-periods. It is thus an even fairer index than the proportions calculated on averages of the variations in the general birth rate. From this point of view, if the 1891 rate be taken as normal, the birth-rate, like the general movement of population, may be said to be returning to normal conditions.

Year	Proportion of children to total population
1891 ..	283
1901 ..	222
1911 ..	270
1921 ..	277

The truth is that there has not been much change in fertility. The fall in 1901 in the above proportion was not so much shrinkage in the birth-rate, as decrease in the survival rate amongst births in the decade owing to heavy mortality. The number of births to a woman of the reproductive ages may be well assumed for the present to be fairly constant. The increase or decrease in births, and hence in birth rate (calculated on the total population) is dependent primarily on the size of the female population of the child-bearing ages.

197. Fecundity in Castes—Subsidiary Table IV-A gives the proportions of children under 12 to total married females aged 15-40 in selected castes. Subject to the limitations pointed out already, the proportions may be studied as indicating roughly the degree of fecundity obtaining in the different communities. In view

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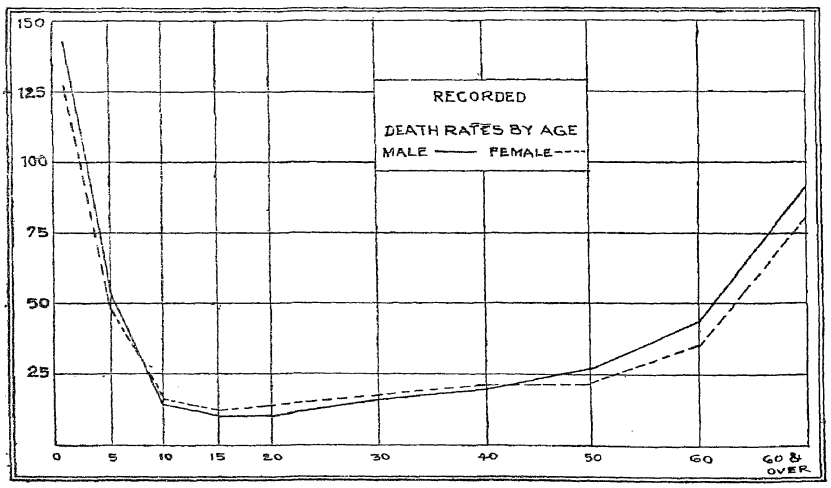
of many disturbing factors, it is not possible to tell from this table whether ascendancy in the social scale or occupation has any effect on fertility. The Writer castes show an extraordinarily high proportion of children (245)—even higher than Kumbhars, Kolis and Early Tribes generally. The Brahman ratio is 188. The Marathas (Kshatriya) show 196. The Trading communities (Jain and Hindu Vanias) have 189. The Musalmans with foreign strain show a ratio of 181, and the local converts have 196. These variations within the Musalman community are perhaps due to the nature of the domicile of each of these sections, as explained already. Personal servants (Hajams and Dhobis) show quite the lowest percentage. From this table therefore there is little evidence of correlation between social status and fecundity. But the proportions of the child population given in para. 194 above do indicate somewhat that socially higher classes have fewer children. The figures however do not convict the higher-classes or any particular social group amongst the Hindus and Musalmans with the Malthusian microbe. The deliberate avoidance of children—whether by voluntary restraints or the use of contraceptives—if it exists at all—is in evidence only in particular localities—highly urbanised or congested areas, or amongst sections of castes or communities which through their English education may be said to have come more or less completely under European influence. The question will be referred to in greater detail in Part II of the Chapter on Sex.

198. Death-Rate by Age and Sex—The registered death-rate make



a closer approach to reality than births and may therefore be a little more carefully analysed. Subsidiary Table IX and the above diagram illustrate the reported death rates by age and sex. If death-rates were available for individual years, it would have been possible to have a more perfect *ogee* curve than is rendered by considering death rates by age groups only. The recorded deaths amongst infants are abnormally high being 142·6 per mille for male and 125·8 per mille for female, infants. The healthiest age-period is 10-15, which has only a recorded mortality rate of 10·7 for boys and 12·9 for girls. The mortality rate for males, taking all ages together, is a little higher than for females ; but the zone wherein female mortality is in excess extends from about the 10th year till the 40th year. The whole period of effective marriage is therefore a very critical period for a woman. The normal mortality table for each sex has been constructed and embodied in the Second Part of this chapter ; therein the mortality rates for each year of age up to 50 may be compared in each sex. It will be found, as in

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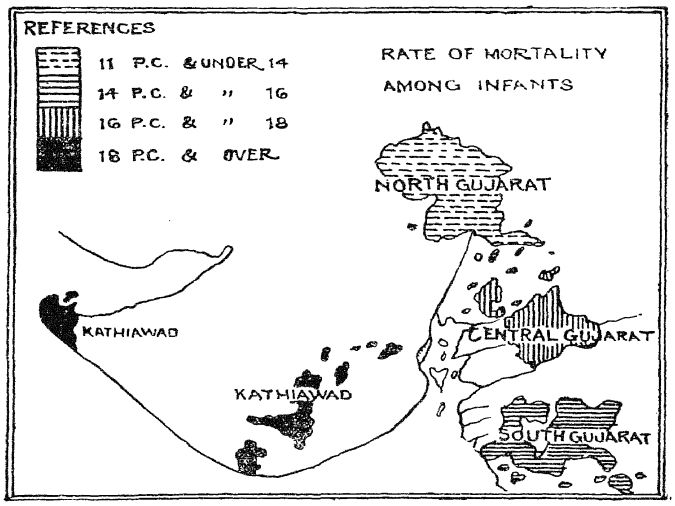
the margin, that the female advantage in deaths is continued normally up to the 16th and 17th years and then it is lost almost entirely till the 40th year, when it is again regained. The recorded death-rates show an even wider zone of mortality than this. There is no reason to suppose that registration of deaths of females is more accurate than that of males. There is therefore reason for assuming that with the passage of time the zone of mortality is extending amongst women. The acuter economic stress of present days has led perforce to a somewhat greater neglect of female infants and children than before. The perils of child-birth have of course continued unabated; while economic necessity has often driven the young expectant mother to continue working in mills and factories up to a point endangering the life of herself and of her unborn child. The migration from the open life of the villages to unhealthy congestion in cooped up urban areas—which has been noticed as a feature in the urban movement in Chapter II—has also had a very injurious effect on women's health generally. Lastly there is the evil of premature motherhood, which I fear is being fostered rather than retarded. In the Bengal Report of 1911, it was noticed that in that Province where the progress of modern influences disintegrating the old bases of social authority may be presumed to have been more rapid than in Bihar and Orissa, the mortality rate for the reproductive ages was higher among females than males: while in Bihar and Orissa, where life was simpler and more primitive, this was not the case. In Gujarat, presumably these disintegrating influences are at least as operative as in Bengal and form one of the root causes of this evil.

Age Period	Number of years of age in which male mortality is in excess	Number of years of age in which female mortality is in excess	Number of years of age in which mortality rates for both sexes are equal
0—9 ..	10	....	....
10—19 ..	8	1	1
20—29 ..	2	8	....
30—39 ..	2	10	....
40—49 ..	10	....	....

109. Infant Mortality—Subsidiary Table XI has been specially compiled to show the proportion of deaths under one year to total births and also to total deaths per natural divisions in the State. The accompanying map shows the incidence of infant mortality in the different divisions in the State. It may be explained that the rates shewn in this map are calculated on the mean infant population of the decade. Kathiawad shows the largest rate of deaths amongst infants. North Gujarat on the other hand shows the least ratio in infant mortality. The average number of infant deaths recorded annually comes to 5,934 male and 5,115 female.



It has been already shewn, while testing the accuracy of Vital Returns, that recorded infant deaths were less than half of what actually happened. The average annual number of infant deaths is estimated to be 27,622. This estimate is based on the assumption that 60 per cent. of deaths under one year happen in the

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first quarter, and that all such deaths are normally omitted from registration. This assumption involves another that the remainder of infant deaths is correctly recorded. That these assumptions are fairly correct is shewn by the fact that the estimate of births formed on their basis is almost the same as those arrived at by actuarial methods. This estimated total of infant deaths gives a mortality rate per average infant population of the decade of 399 per mille. Perhaps the death-rate is not so high, but as it is dependent on the number of births directly, and as the actuarial estimate of births is a trifle exaggerated, as will be pointed out later, the true rate is somewhere about 350 per mille. The same Life Table also shows that of a hundred births only about 70 survive on to the second year of age. Subsidiary Table XI which is based entirely on figures of registered births and deaths, shows that of a hundred births, 19 die in the first year and 81 live on to the second. The ratio of survival after the first critical year is greatest in North Gujarat and lowest in Central. The City shows the largest proportion of infant deaths to births. But this is due in a large proportion of cases to births happening outside the City and deaths occurring amongst the infants after the parents return with them to their normal residence. The true indication is given in column 10 of the same table, where the percentage of infant deaths to total is shewn per division. Here, the City figure is exceeded by Kathiawad. The largeness of the City percentage as compared to North Gujarat for instance may be ascribable also to under-registration of infant deaths in the latter area. All evidences,—life tables, vital returns, local experience—unite in stating that mortality among female infants is lower than among male. The normal experience in all countries is that male infants are more delicate and difficult to bring up than female. The causes of infantile mortality are familiar enough; and in this respect, the experience of Baroda is part of the general Indian experience. The chief of these are the poor vitality of immature motherhood, ignorant midwifery, disregard of hygiene and underfeeding among the poorer class women. The following extract from the Bengal Report of 1911 summarises the various aspects of the infant mortality problem in this country. The conditions are reproduced perhaps in a less virulent form in this State; but the conclusions at any rate may be found instructive reading:—

" A very large proportion of the deaths occur within the first month of life, but statistics are not available except for Calcutta. The number who fail to survive even for this short time may be gathered from the following note kindly contributed by Major W. W. Clemesha, I.M.S., Sanitary Commissioner of Bengal. The note is concerned primarily with the statistics compiled for 1909 by Dr. Pearse, the Health Officer of Calcutta, but throws so much light on the causes of infantile mortality, that it is quoted *in extenso*. It may however, first be stated that over half of the children that died within a year of birth actually died in the first month. 'All who have studied the subject of infant mortality in this country recognise that the causes of infant deaths fall under two main heads. First, conditions connected with the health of parents, such as premature marriage and the prevalence of such wasting diseases as malaria, which particularly affect the well-being of the mother. The second head is equally important, *viz.*, the extremely insanitary conditions of child-birth and the appalling ignorance prevalent. The figures given by Dr. Pearse demonstrate these points to a most remarkable extent. Out of something like 2,700 children that die within the first month, more than 1,200, or nearly 50 per cent., come under the heads of premature birth and debility at birth. These deaths obviously come under the first heading named above: probably early marriage is the preponderating factor, because malaria is comparatively rare in Calcutta. Under the second heading practically another 1,000 children die of tetanus and convulsions, diseases which are occasioned by the ignorance in matters of hygiene relating to birth-rate on the part of the mother and those attending to her. It appears that under these two heads about 2,200 out of 2,700 deaths can be accounted for. Grave social conditions, such as child marriage, are things which are difficult to alter and which the spread of education alone can hope to remedy. Deaths which are occasioned by tetanus are, however, entirely preventible. Even a little ordinary cleanliness and a little common knowledge would reduce the death-rate nearly one-half. Concerning the mortality of children between the ages of one month and one year, the causes are many and various. Bronchitis and chest troubles generally appear to account for a very large number of deaths. The children are not sufficiently clad in the cold weather and further, it is the weakly child (*i.e.*, the child of immature parents) which is most likely to contract fatal lung trouble.' "

200. Death-Rate by Locality and Religion.—The accompanying diagram is prepared on the basis of the vital returns and is of course based on the assumption that they are correct. This diagram may be well referred

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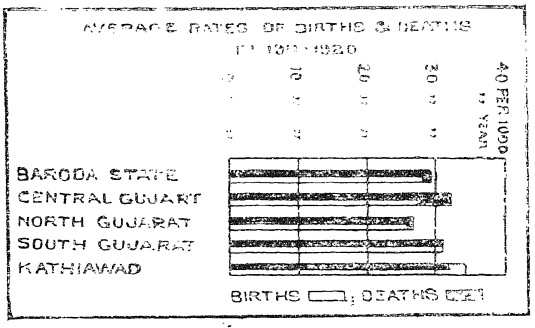
back to Chapter I and to that part of it where the public health in the decade is discussed; therein the incidence of plague, influenza and malaria in the different divisions is estimated. The diagram shows an excess of births over deaths in Kathiawad, but this is shewn in para. 71 to be untrue. As a matter of fact, there must have been a natural decrease of over 8,000 in this division; and the mortality rate has been estimated to be nearly 50 per cent. in the decade, on the 1911 population of this division.



The death rates prevailing among different religions are another interesting feature of the mortuary returns. Taking a normal year, and also an epidemic year (1918) side by side, the marginal table shows variations in the death-rate by religions. The figures for Animists are omitted for the reason as already pointed out that registration is lamentably deficient among them. The figures for Christians are similarly defective and also omitted. The healthiest community is the Jain undoubtedly, followed by the Parsis. These two communities have also a low birth-rate. The Musalmans follow at a little distance and then the Hindus. It appears that there is a high correlation between variations in birth, and normal death rates.

Religion	Death rate per mille	
	A Normal Year	1918
Hindu ..	29	70
Musalman	23	50
Jain ..	11	22
Parsi ..	17	38

201. Normal Birth and Death-Rates—In the last Census Report, the normal birth and death-rates were calculated roughly from the mean age, which was assumed to be slightly higher than the mean expectation of life. In this census, a Life Table has been prepared for both sexes by Prof. Vaidyanathan. This Life Table is constructed on the assumption that births and deaths normally balance each other and that the population is stationary. On this basis it appears that 100,000 male births are required in this State annually to keep alive a population of 2,243,874 males, and that similarly 100,000 female births are yearly required for a population of 2,290,561 females. This gives a birth-rate of 44·57 for males; 43·65 for females, or 43·47 for both sexes, calculated per mille of the mean population. On the theory of the life-table, these ratios would also be rates of mortality in a normally stationary population. Mr. Ackland took these as death-rates and then added the estimated rate of natural increment as found from a study of the general movement of population to form the birth-rate. By this means, in my opinion, he wholly exaggerated the rate of births. If we accept Mr. Ackland's plan and add 8·75 per mille which we found from the experience of the normal decade of 1881-1891 to be the normal rate of natural increase we get a very high birth-rate of 52·22 per mille which is wholly untrue for this State. The birth-rate is really a fairly constant factor, famines do little to affect it—epidemics indeed may influence it but only indirectly; it is the death-rate however that fluctuates from decade to decade, and its curve responds quickly to any abnormal disturbance that happens. For this reason I doubt whether any mortality table that was ever constructed, especially an Indian Life Table which is admittedly so little dependent on vitality-returns, can entirely eliminate the effects of disturbing factors. Prof. Vaidyanathan himself admits this. Further his Life Table is based not on the normal experience of 1891, but on the not entirely normal experience of 1911, which is given double weight in comparison to the returns of 1901 and 1921. Again, he explains that for ages earlier than 12, his Life Table has been constructed with the data of the Proclaimed clans' experience of 1876-1901, which he himself condemns. He does indeed introduce suitable adjustments to meet the requirements of his curve, but these adjustments have only succeeded in suggesting mortality-rates for these early ages, which are mere "rough approximations,"—I am quoting his own words—" to the truth."

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Under these circumstances, it will be a correcter proceeding to take the above ratios as representing the *normal birth-rate* and then *deduct* the normal rate of natural increase for the normal death-rate. Thus with the normal birth-rate at 43·47, the normal death-rate will be 34·72 per mille per annum*. That these ratios are nearer to the truth than those found by adopting Mr. Ackland's plan, is proved by the facts of the general movement of population in the State. The normal rate of natural increment is indeed 8·75 per mille per annum. This normal rate we have shewn to be correct by working out what the population would have been if only this rate operated without the intervention of specified disturbing factors in the decades 1901-11 and 1911-21. The mortuary returns, it is true, are not satisfactory, but they are less defective than birth-registration ; and the margin of error has been also calculated. This margin may be fairly assumed to be the same since 1901. If we take the registered deaths for normal years for each decade since 1901 and then add the margin of error, we can thereby arrive at a fairly accurate guess of the normal death-rate obtaining in this State. The number of such normal years is fourteen. The deaths in these years may be totalled and the annual registered average may be reckoned therefrom. The corrected annual average of deaths in normal years may be found thereafter by adding the percentage of omissions as estimated in para. 59. This average proportioned to the populations of the two censuses of 1901 and 1911 gives the normal death-rate. To this may be added the normal rate of natural increase, to get the birth-rate. Making these calculations the normal birth and death-rates are found to be 43·62 and 34·87 per mille respectively.†

202. Normal Fecundity Rate.—In an earlier part of this discussion we have shewn that fertility in the general population viewed over a large number of years hardly indicates any change. If we assume that the fertility rate is fairly constant, and that the volume of births shrinks or expands according as the number of females of the reproductive ages increases or diminishes, then certain interesting results follow. Now, if the birth-rate is assumed thus to be fairly constant, the rate of infant mortality may be well assumed to be the same for any normal year. Thus, if we can get corrected census returns for the age-period 0-1, there is a constant ratio between the census return at that age and the number of births in the previous twelve months; and this relation enables us to estimate with a high degree of accuracy the number of births in any one normal year. So long as vital returns continue to be so lamentably defective as they are now, so long some such method is necessary. Appendix II elaborates the details of this method and clearly lays down the assumptions on which it is based. Besides the above assumptions, it also assumes that the mortality amongst infants proceeds more or less on the basis of a law, decreasing in a diminishing series in proportion as the infant survives month after month, till it attains its first year. It assumes that 60 per cent. of infant deaths occur within the first quarter, 12 in the second and 8 in the third or last

* It will be interesting to calculate the mean expectation of life from the above rates by Dr. Farr's formula. Dr. Farr established the following formula for obtaining an approximation to the expectation of life at birth when the birth and death-rates per unit of population were known :—

"If b=birth-rate and d=death-rate per unit of population, then the expectation of life=

$$\left(\frac{2}{3}\times\frac{1}{d}\right)+\left(\frac{1}{3}\times\frac{1}{b}\right)$$ *Vide* Newsholme, *Vital Statistics*, p. 301 (1899 Edition).

Calculating on this formula, we get the following equation :

$$\left(\frac{2}{3}\times\frac{1}{\cdot 03472}\right)+\left(\frac{1}{3}\times\frac{1}{\cdot 04347}\right)=26\cdot 869,$$

which is the number of years of the mean duration of life in the population of this State under normally progressive conditions. This mean duration of life may be compared to that found for this State for males in the Life Table, which is 22·44 years.

† The annual registered average of deaths for six normal years in 1911-1921 is 50,892. This is multiplied by $\frac{826744}{612055}$ which gives a corrected annual average of deaths for normal years of 68,743·66. This on the population of 1911 gives a death-rate of 33·82 per mille per annum. The annual registered average for 8 normal years in 1901-1911 is 51643·1. The rest of the calculations are contained in the following equation :—

$$\frac{51643\cdot 1\times 826744\times 1000}{1952692\times 612055}=35\cdot 92.$$ The mean of these two ratios is 34·87.

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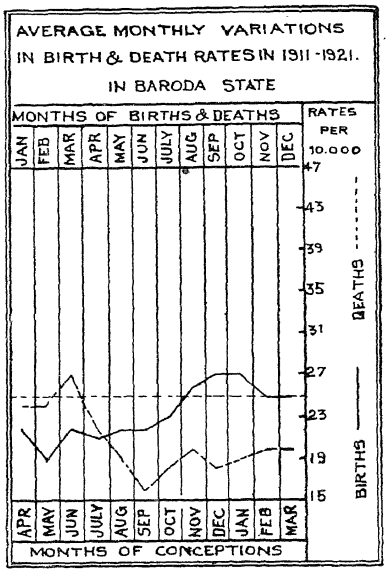
quarter, of the year. On these assumptions a table is constructed on the basis of the actual Hamburg Vitality experience for 1911-12 (quoted in Whipple's *Vital Statistics* p. 342). From this table to which the reader is referred for details, we find that 100,000 births in the previous twelve months show 78,727 infants alive on the census day. We can also calculate from these data that 22,093 children are normally born in a decade to 10,000 married females aged 15-45. Or, if we take the reproductive limits to be only 15-40, the number of normal births in a decade to 10,000 such females is 24,707. Registered births only give a ratio of 16,294 per 10,000 females aged 15-45. If we take the normal birth-rate as revealed by the Life Table, the proportion of normal births to 10,000 married females is 26,345 in a decade. These ratios will be further examined in the light of the Sex enquiry, the results of which are given in the Second Part of the Chapter on Sex.

203. Monthly variations in Birth and Death Rates—Much has been made already of the inaccuracies of Vital Statistics. But there is one direction where they can be profitably utilised and studied. The returns for births and deaths may be taken by months over a whole decade, averaged and further modified by the elimination of all disturbing factors, and thereafter they may be compared. In the marginal diagram the average monthly rates of births in 1911-21—after excluding the months of epidemic prevalence—have been plotted in the same manner as the diagram in the Bengal Report of 1911. The months of births and deaths are shewn on the top with the corresponding months of conceptions indicated below. The diagram is only prepared for the State and not for the Divisions separately. One reason for this is that the vital registration is very defective in unhealthy areas, and rates calculated on such defective figures will only serve to mislead. Secondly, the contrasts in climate are not so great in Baroda as to necessitate separate analysis by divisions. We see that the birth-rate, taken month by month shows a gradual rise from January till it attains its maximum in September and October and then falls a little in November and December. It must be added, however, that the birth-curve in its progress from January drops significantly in February. The death-rate on the other hand rises from January to March when it attains its maximum. Then it falls, remains low throughout the summer months, begins to rise again with the rains in June and continues to rise till August. September shows a little respite. With October, the drying up of the ground fosters the growth of mosquitoes, and the fever season commences. November and December are unhealthy but less so than the first three months of the year.



We see that the rise in the birth-rate is synchronous with the fall in the death-rate. From April to December the death-rate rules usually low with occasional rises in August, November and December. From April to December, on the other hand, the births are in the ascendant and continue high, till the end of the year The months of highest birth-rate are August, September and October. Corresponding to these months are November, December and January, representing the periods most favourable to conceptions. The death-rate also begins to rise in these months. It does not seem therefore as if death-rate or an increasing fever prevalence has much inhibiting effect on the reproductive principle. It is true that the steep rise of mortality from January to March does have an effect in reducing the conception curve ; but even then the conception rate continues high until May

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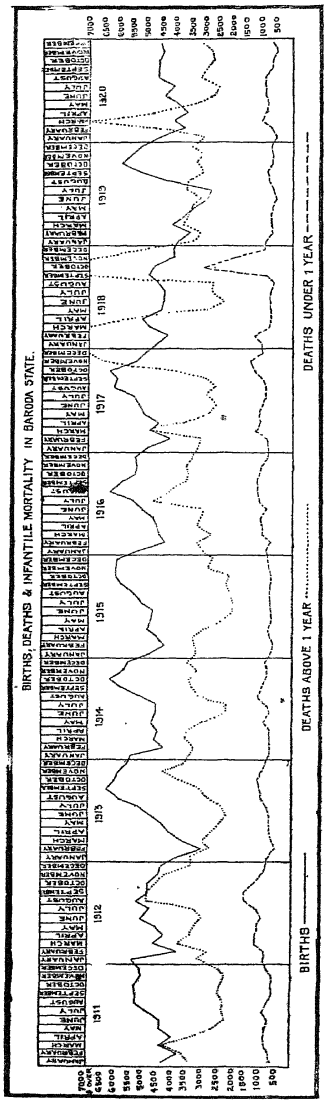
when it drops down. This drop corresponds to the drop in February in birth-rate mentioned above. The main reason therefore seems to be economic considerations. From December to April, the harvest of the two crops is gathered in, the surplus produce is sold in the markets and the material condition of the people, at least in normal years, is at its best. The drop in May is due perhaps to the fact that that month is at the heart of the "dead season" for agriculture. The subsequent months of the monsoon with its urgency of agricultural operation, are marked by a comparative infrequency of conceptions, although there is a rebound from the depression in May. With September, the conception curve rapidly rises. How far these general conclusions on the periodicity of reproduction are modified in unhealthy and hyper-endemic areas it is not possible to determine from the present state of vital records in Baroda.



204. Synchronous Birth and Death Rates—In the Census Report of Bengal for 1911, Mr. L. S. O'Malley by a very effective diagram made out that the phenomenon of variations in birth and death rates being synchronous was not due to high infant mortality as was usually supposed. To quote his words : "The explanation is of course that the birth-rate depends on the conditions obtaining at the time of conception. Conceptions are most numerous in the healthiest months, whereas the periods (9 months later) at which births take place are unhealthy, so that a high birth-rate is synchronous with a low birth-rate." Perhaps the seasonal variation of death-rates in Bengal helps Mr. O'Malley in his theory. I tried to plot a curve on this basis, which I here give for the reader to study. The synchrony between births and deaths over one year is not nearly so regular as in the Bengal curve. The years of 1917 and 1918 were of course exceptional. 1920 in spite of the absence of disturbing factors shows little correspondence, but 1914, 1915, and 1916 and to a smaller extent 1913 show a somewhat simultaneous rise and fall in birth and death-rates. But the comparative want of correspondence in Baroda is due perhaps to the different conditions prevailing here. In the preceding paragraph it was pointed out that the conception curve was governed mainly by economic and agricultural considerations here and only to a minor extent by fever-prevalence or high mortality. The healthiest months are the summer months April—July; and in these months conceptions are found to rule comparatively low. On the other hand when the conceptions are at their highest, the months are far from healthy.

The curve illustrates another interesting point. A high infant mortality by shortening the suckling period is said to encourage conceptions. If we examine the peaks of the Infant Mortality curve in the diagram, August—September 1912, October 1913, August 1914 and October—November, 1918—periods when the death rate among the infants was very high we will find that birth-curves about a year later show also a steep rise, as for instance in September—October 1913, October 1914, October 1915, and October 1919. A high infant mortality therefore indirectly helps birth-rate, as Newsholme pointed out.

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SUBSIDIARY TABLE I.—AGE DISTRIBUTION OF 100,000 OF EACH SEX BY ANNUAL PERIODS

Age	Males			Females		
	Hindu	Musalman	All religions	Hindu	Musalman	All religions
1	2	3	4	5	6	7
0	3,047	2,943	3,081	3,286	3,130	3,308
1	1,459	1,350	1,444	1,621	1,456	1,603
2	2,400	2,411	2,400	2,767	2,750	2,766
3	2,525	2,450	2,571	2,935	2,706	2,935
4	2,935	2,623	2,924	2,827	2,663	2,854
5	3,426	3,184	3,420	3,257	2,999	3,342
6	2,562	2,389	2,586	2,579	2,518	2,565
7	2,588	2,454	2,622	2,630	2,529	2,627
8	3,499	3,264	3,501	3,181	3,141	3,156
9	1,943	1,942	1,981	1,887	1,823	1,912
10	3,802	3,767	3,813	3,359	3,359	3,349
11	1,506	1,529	1,529	1,551	1,521	1,590
12	3,624	3,608	3,619	3,034	3,136	3,034
13	1,685	1,715	1,696	2,047	1,779	2,016
14	1,613	1,632	1,637	1,724	1,844	1,731
15	3,305	2,938	3,235	2,844	2,697	2,797
16	1,765	1,517	1,736	1,524	1,577	1,548
17	1,082	1,039	1,076	902	950	944
18	1,907	1,827	1,890	1,741	1,975	1,759
19	526	493	529	392	464	461
20	3,643	3,850	3,578	4,307	4,908	4,270
21	589	544	602	434	453	517
22	1,913	2,177	1,919	1,879	1,978	1,960
23	556	546	567	526	526	610
24	540	550	564	527	469	567
25	5,438	5,678	5,333	5,541	5,962	5,386
26	602	657	633	489	480	543
27	751	788	779	656	602	710
28	1,460	1,273	1,424	1,548	1,264	1,529
29	231	237	249	205	160	263
30	5,639	5,781	5,532	6,114	6,635	5,927
31	314	273	313	217	218	261
32	1,666	1,511	1,678	1,599	1,326	1,602
33	325	284	344	287	217	335
34	250	265	263	208	175	248
35	5,356	5,402	5,315	5,156	5,301	5,009
36	445	421	453	370	316	412
37	347	301	374	315	261	351
38	656	484	683	697	493	706
39	168	177	187	170	89	198
40	4,863	5,252	4,792	5,694	6,063	5,471
41	217	218	220	157	308	218
42	933	872	947	811	448	798
43	165	169	172	151	108	172
44	146	125	149	135	107	156
45	3,359	3,399	3,373	3,275	3,275	3,197
46	193	187	196	141	104	171
47	192	186	202	175	107	203
48	439	333	454	378	262	392
49	115	99	123	114	82	133
50	3,986	4,443	3,898	4,175	4,434	4,018

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SUBSIDIARY TABLE I.—Age distribution of 100,000 of each sex by annual periods

Age	Males			Females		
	Hindu	Musalman	All religions	Hindu	Musalman	All religions
1	2	3	4	5	6	7
51	186	200	199	130	89	146
52	545	512	539	417	273	421
53	111	102	111	85	48	95
54	93	109	97	71	42	76
55	1,611	1,739	1,621	1,363	1,316	1,357
56	134	146	139	83	80	93
57	113	97	114	79	44	89
58	168	147	171	132	105	137
59	58	44	57	38	19	44
60	2,127	2,539	2,104	2,638	3,152	2,563
61	70	103	73	74	62	76
62	164	171	168	148	120	147
63	43	47	44	56	23	58
64	32	41	34	37	4	34
65	640	797	656	668	732	659
66	37	42	41	23	29	27
67	36	29	39	26	10	27
68	51	42	51	43	32	44
69	21	14	21	14	19	18
70	514	678	506	605	739	595
71	20	18	19	16	14	16
72	50	72	52	48	32	48
73	9	18	10	6	5	6
74	7	6	8	8	6	8
75	192	280	198	230	332	238
76	9	6	9	10	10	9
77	7	12	8	8	6	8
78	11	11	11	9	9	8
79	2	2	2	3	0	3
80	189	261	184	263	323	255
81	4	12	5	8	8	7
82	9	6	9	7	3	7
83	2	....	2	1	1	1
84	2	1	2	1	....	1
85	28	42	28	31	43	32
86	3	2	2	2	....	2
87	1	6	1	1	3	1
88	2	4	2	....	....	1
89	1	2	1	....	....	....
90	33	52	33	45	71	45
91	1	1	1	1	....	1
92	1	1	1	2	....	2
93	1	1	1	1	....	1
94	1	2	1	1	....	1
95	9	10	9	12	13	11
96	....	....	....	....	3	1
97	1	....	1	....	....	....
98	1	2	1	1	3	1
99	....	2	....	....	1	....
100 and over	14	26	14	16	39	16

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SUBSIDIARY TABLE I-A.—AGE DISTRIBUTION OF 100,000 OF EACH SEX BY ANNUAL PERIODS CORRECTED

Age	All Religions		Age	All Religions	
	Males	Females		Males	Females
0	3,055	3,270	50	841	788
1	2,837	3,135	51	804	760
2	2,782	3,025	52	752	718
3	2,742	2,900	53	691	638
4	2,715	2,809	54	640	550
5	2,710	2,685	55	580	508
6	2,700	2,595	56	525	488
7	2,687	2,529	57	452	463
8	2,675	2,480	58	423	446
9	2,658	2,444	59	390	430
10	2,605	2,426	60	369	422
11	2,537	2,397	61	358	412
12	2,434	2,354	62	346	401
13	2,305	2,240	63	331	376
14	2,155	2,080	64	308	328
15	1,995	1,852	65	225	229
16	1,907	1,788	66	160	147
17	1,832	1,749	67	136	134
18	1,763	1,727	68	117	124
19	1,702	1,706	69	104	115
20	1,645	1,688	70	97	109
21	1,599	1,672	71	93	105
22	1,583	1,667	72	91	100
23	1,605	1,672	73	88	96
24	1,660	1,690	74	78	89
25	1,713	1,730	75	66	78
26	1,751	1,790	76	50	58
27	1,761	1,806	77	40	51
28	1,747	1,794	78	35	46
29	1,706	1,730	79	33	44
30	1,674	1,662	80	28	41
31	1,636	1,609	81	27	39
32	1,599	1,572	82	26	36
33	1,558	1,536	83	25	31
34	1,517	1,503	84	19	15
35	1,460	1,470	85	11	11
36	1,413	1,441	86	8	9
37	1,365	1,400	87	7	8
38	1,321	1,355	88	6	8
39	1,270	1,303	89	6	7
40	1,224	1,242	90	5	7
41	1,166	1,190	91	5	7
42	1,115	1,138	92	5	6
43	1,064	1,091	93	5	6
44	1,017	1,040	94	4	5
45	984	988	95	4	5
46	950	945	96	2	3
47	920	903	97	1	1
48	891	863	98	..	..
49	873	820	99	..	..
			Total	100,000	100,000

NOTE — Proportional figures have been calculated on ages corrected according to the Columnar method.

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SUBSIDIARY TABLE II.—Age distribution of 10,000 of each sex in the State and each natural division

Age	1921		1911		1901		1891	
	Male	Female	Male	Female	Male	Female	Male	Female
1	2	3	4	5	6	7	8	9
Baroda State								
0— 1 ..	308	331	394	416	145	156	314	343
1— 2 ..	145	160	188	208	133	139	164	186
2— 3 ..	240	277	316	343	205	226	272	316
3— 4 ..	257	294	292	340	220	249	282	340
4— 5 ..	292	285	299	302	260	286	289	324
0— 5 ..	1,242	1,347	1,489	1,609	963	1,056	1,321	1,509
5—10 ..	1,411	1,360	1,141	1,044	1,254	1,236	1,424	1,407
10—15 ..	1,229	1,171	935	825	1,357	1,200	1,108	932
15—20 ..	847	751	887	818	1,036	941	865	772
20—25 ..	723	786	970	1,026	998	1,007	921	995
25—30 ..	842	843	986	1,006	978	959	916	909
30—35 ..	813	837	840	895	869	831	865	850
35—40 ..	701	668	712	656	679	653	609	559
40—45 ..	628	681	666	705	632	693	649	675
45—50 ..	435	410	406	364	380	399	327	301
50—55 ..	484	476	439	462	419	461	465	480
55—60 ..	210	172	170	150	167	190	142	127
60—65 ..	242	288	211	272				
65—70 ..	81	77	64	64	268	374	388	484
70 and over	112	133	84	104				
Mean age ..	*23·96*	*24·04*	*22·77*	*22·77*	*23·56*	*23·76*	*23·19*	*23·47*
Baroda City								
0— 5 ..	921	1,133	1,078	1,255	733	877	919	1,125
5—10 ..	1,046	1,122	859	902	1,020	1,038	880	981
10—15 ..	1,087	986	889	787	1,091	881	828	751
15—20 ..	859	807	935	909	946	824	880	863
20—40 ..	3,703	3,342	3,860	3,531	3,843	3,613	4,006	3,575
40—60 ..	1,890	1,945	1,905	1,931	1,992	2,159	1,979	1,973
60 and over	494	665	474	685	375	608	508	732
Mean age ..	*26·14*	*26·24*	*24·55*	*25·65*	*27·15*	*28·52*	*27·72*	*27·76*
Central Gujarat								
0— 5 ..	1,152	1,284	1,397	1,535	846	892	1,219	1,411
5—10 ..	1,348	1,308	1,084	992	1,232	1,228	1,299	1,299
10—15 ..	1,173	1,157	869	746	1,303	1,082	1,047	833
15—20 ..	819	716	847	768	945	830	876	790
20—40 ..	3,125	3,140	3,620	3,670	3,734	3,750	3,458	3,476
40—60 ..	1,922	1,870	1,810	1,813	1,679	1,851	1,729	1,727
60 and over	461	525	373	476	261	367	372	464
Mean age ..	*24·95*	*24·81*	*23·61*	*23·77*	*25·06*	*26·05*	*24·84*	*24·97*
North Gujarat								
0— 5 ..	1,287	1,377	1,543	1,661	959	1,012	1,366	1,555
5—10 ..	1,453	1,387	1,192	1,032	1,259	1,237	1,547	1,494
10—15 ..	1,272	1,186	931	798	1,407	1,259	1,191	1,007
15—20 ..	888	748	901	810	1,156	1,044	891	760
20—40 ..	2,999	3,105	3,508	3,651	3,473	3,432	3,116	3,187
40—60 ..	1,699	1,731	1,615	1,676	1,507	1,692	1,499	1,526
60 and over	402	466	310	372	239	324	390	471
Mean age ..	*23·29*	*23·65*	*22·10*	*22·74*	*23·71*	*24·60*	*23·25*	*23·54*
South Gujarat								
0— 5 ..	1,359	1,409	1,611	1,660	1,302	1,463	1,491	1,624
5—10 ..	1,481	1,379	1,247	1,184	1,360	1,358	1,520	1,492
10—15 ..	1,232	1,180	1,097	1,039	1,327	1,172	1,134	996
15—20 ..	820	839	834	853	964	916	767	771
20—40 ..	3,043	3,201	3,267	3,386	3,211	3,080	3,254	3,247
40—60 ..	1,631	1,547	1,554	1,431	1,508	1,559	1,466	1,430
60 and over	434	445	390	447	328	452	368	440
Mean age ..	*23·53*	*23·44*	*22·25*	*22·09*	*23·49*	*23·88*	*23·23*	*23·19*
Kathiawad								
0— 5 ..	1,294	1,386	1,567	1,677	931	1,136	1,430	1,633
5—10 ..	1,495	1,482	1,077	1,062	1,273	1,149	1,372	1,388
10—15 ..	1,286	1,221	904	806	1,493	1,502	1,001	851
15—20 ..	778	681	1,015	900	936	897	827	728
20—40 ..	3,037	3,029	3,370	3,403	3,428	3,193	3,535	3,429
40—60 ..	1,631	1,610	1,669	1,653	1,681	1,757	1,438	1,415
60 and over	479	591	398	499	258	366	397	556
Mean age ..	*23·50*	*23·68*	*22·06*	*22·87*	*24·50*	*24·69*	*23·69*	*23·80*

The mean age for the State, each Natural Division and City has been calculated for 1921 on the ages corrected according to the Columnar method referred to in the body of the Report. The mean age for 1911, 1901 and 1891 (State, Districts and City) has been taken from the Census Report of 1911.

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SUBSIDIARY TABLE II-A.—Age distribution of 10,000 of each sex in the state corrected

Age	1921		1911		1901	
	Male	Female	Male	Female	Male	Female
1	2	3	4	5	6	7
0—5	1,413	1,514	1,521	1,630	947	1,006
5—10	1,343	1,273	1,174	1,067	1,254	1,230
10—15	1,204	1,150	956	855	1,269	1,164
15—20	920	882	1,031	1,015	1,129	1,046
20—25	809	839	1,031	1,070	1,014	991
25—30	868	885	967	1,012	961	944
30—35	798	788	816	817	848	828
35—40	683	697	712	703	717	714
40—45	559	570	566	559	579	603
45—50	462	452	432	469	457	492
50—55	373	345	328	331	337	372
55—60	237	234	198	218	216	252
60—65	171	194	145	175	113	148
65—70	74	75	57	60	61	86
70—75	45	50	34	38	38	53
75—80	22	28	16	22	27	37
80—85	12	16	10	12	17	23
85—90	4	4	3	3	9	11
90—95	2	3	2	3	5	5
95—100	1	1	1	1	2	3
Total ..	10,000	10,000	10,000	10,000	10,000	10,000

Note.—Proportional figures have been calculated for 1921 and 1911 on ages corrected according to the *Columnar method* and figures for 1901 have been calculated on ages smoothed according to the Bloxam method.

SUBSIDIARY TABLE III.—Age distribution of 10,000 of each sex in main religions.

Age	1921		1911		1901		1891	
	Male	Female	Male	Female	Male	Female	Male	Female
1	2	3	4	5	6	7	8	9
Hindu—								
0—5 ..	1,237	1,344	1,473	1,604	910	993	1,338	1,530
5—10 ..	1,402	1,353	1,128	1,026	1,268	1,239	1,438	1,422
10—15 ..	1,223	1,172	929	812	1,372	1,215	1,111	936
15—20 ..	859	740	896	818	1,045	948	868	773
20—40 ..	3,083	3,125	3,536	3,605	3,555	3,490	3,301	3,304
40—60 ..	1,762	1,760	1,685	1,702	1,597	1,763	1,564	1,563
60 and over	434	506	353	433	253	352	380	472
Mean age ..	*23·99*	*24·14*	*22·86*	*22·94*	*23·70*	*24·66*	*23·85*	*23·86*
Animist—								
0—5 ..	1,435	1,562	1,902	2,023	1,433	1,637	1,649	1,929
5—10 ..	1,654	1,554	1,385	1,310	1,252	1,304	1,712	1,653
10—15 ..	1,265	1,185	914	909	1,295	1,172	1,131	891
15—20 ..	781	842	724	817	1,028	946	779	818
20—40 ..	3,001	3,167	3,348	3,423	3,240	3,129	3,262	3,318
40—60 ..	1,571	1,427	1,455	1,229	1,427	1,412	1,270	1,155
60 and over	293	263	272	289	325	400	196	236
Mean age ..	*22·27*	*21·84*	*20·59*	*19·92*	*22·54*	*22·12*	*21·37*	*20·79*
Musalman—								
0—5 ..	1,177	1,271	1,430	1,528	985	1,016	1,230	1,353
5—10 ..	1,323	1,300	1,120	1,049	1,182	1,197	1,288	1,287
10—15 ..	1,225	1,164	952	856	1,310	1,141	1,082	907
15—20 ..	781	766	874	820	967	916	829	765
20—40 ..	3,120	3,183	3,391	3,534	3,503	3,416	3,415	3,426
40—60 ..	1,838	1,731	1,803	1,700	1,733	1,828	1,713	1,691
60 and over	536	585	430	513	320	486	443	571
Mean age ..	*24·87*	*24·55*	*23·42*	*23·47*	*23·80*	*25·26*	*25·03*	*25·34*
Jain—								
0—5 ..	1,030	1,051	1,195	1,218	873	1,042	1,065	1,199
5—10 ..	1,245	1,180	1,116	993	1,019	993	1,161	1,181
10—15 ..	1,282	1,142	1,022	933	1,182	1,066	1,048	932
15—20 ..	818	744	888	766	999	839	885	720
20—40 ..	3,096	3,213	3,436	3,537	3,767	3,523	3,376	3,322
40—60 ..	1,984	2,030	1,905	1,963	1,847	2,048	1,932	1,954
60 and over	545	640	438	590	313	489	533	692
Mean age ..	*25·89*	*26·44*	*24·65*	*25·31*	*25·34*	*26·33*	*26·58*	*27·02*

The mean age for each religion has been calculated for 1921 on the ages corrected according to the Columnar method. The mean age for 1911, 1901 and 1891 has been taken from the Census Report of 1911.

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SUBSIDIARY TABLE IV.—AGE DISTRIBUTION OF 1,000 OF EACH SEX IN CERTAIN CASTES

Caste	Males number per mille aged					Females number per mille aged				
	0–5	5–12	12–15	15–40	40 and over	0–5	5–12	12–15	15–40	40 and over
1	2	3	4	5	6	7	8	9	10	11
Hindu, Jain and Animist—										
I. *The (selected) Brahmans (Hindu)*	*103*	*167*	*73*	*389*	*268*	*108*	*161*	*66*	*391*	*274*
Brahman Anavala	108	179	78	386	249	114	173	66	407	240
,, Audich	99	165	73	396	267	102	157	66	391	284
,, Deshastha	91	150	71	404	284	110	174	64	360	292
,, Nagar	102	185	77	345	291	110	164	72	382	272
II. *The Warrior Class (Hindu)* ..	*111*	*174*	*68*	*421*	*226*	*118*	*175*	*70*	*392*	*245*
Maratha Kshatriya	95	145	64	470	226	110	171	60	405	254
Rajput	113	175	70	417	225	116	169	72	401	242
Vagher	121	255	50	346	228	153	267	64	236	280
III. *The Writers (Hindu)*	*112*	*196*	*76*	*382*	*234*	*140*	*196*	*83*	*360*	*221*
Brahmakshatri	94	147	44	416	299	84	153	55	380	328
Prabhu	123	212	89	367	209	154	208	91	357	190
IV. *Bards and Actors (Hindu)* ..	*118*	*158*	*73*	*391*	*260*	*115*	*155*	*87*	*373*	*270*
Brahma Bhat	109	141	75	407	268	129	136	94	360	281
V. *Traders (Hindu or Jain)*	*107*	*169*	*77*	*394*	*253*	*106*	*168*	*71*	*397*	*258*
(i) Hindu Vania	107	159	78	394	262	106	166	67	390	271
Disawal	91	144	74	409	282	93	156	77	391	283
Lad	106	159	81	400	254	98	156	68	404	274
(ii) Jain Vania	106	181	76	394	243	105	171	76	405	243
Shrimali	106	182	77	395	240	104	172	76	408	240
VI. *Agriculturists (Hindu)*	*119*	*180*	*75*	*407*	*219*	*126*	*176*	*77*	*393*	*228*
Kachhia	111	153	64	399	273	101	143	73	394	289
Kanbi Anjana	116	178	74	431	201	113	171	79	399	238
,, Lewa	110	170	75	403	242	114	168	76	395	247
VII. *Craftsmen and Artisans (Hindu)*	*121*	*194*	*78*	*391*	*216*	*124*	*180*	*76*	*388*	*252*
Bhavsar	118	187	75	379	241	108	161	60	406	265
Darji	128	202	79	371	220	115	174	77	392	242
Ghanchi	122	190	81	389	218	122	176	71	408	223
Gola	143	200	78	411	168	133	169	74	406	218
Kumbhar	124	210	79	391	196	130	192	84	379	215
Machhi	127	177	67	401	228	143	182	71	352	252
Mochi	121	194	80	390	215	139	184	77	389	211
Soni	115	173	75	405	232	108	170	65	403	254
Sutar	107	173	82	402	236	120	178	76	385	241
VIII. *Labouring Class (Hindu)* ..	*131*	*204*	*67*	*376*	*222*	*146*	*187*	*68*	*390*	*209*
Baria	100	183	74	386	257	106	173	69	410	242
Koli	136	209	65	375	215	152	189	69	385	205
Vaghri	154	208	65	348	225	170	203	60	378	189
IX. *Herdsmen*	*120*	*195*	*80*	*396*	*209*	*128*	*195*	*83*	*375*	*219*
Ahir	122	193	68	408	208	135	215	73	358	219
Rabari	119	197	82	393	209	126	193	84	375	222
X. *Personal Servants*	*116*	*193*	*79*	*387*	*225*	*120*	*176*	*72*	*399*	*233*
Hajam	117	194	78	387	224	120	176	72	399	233
XI. *Early Tribes*	*150*	*214*	*71*	*372*	*193*	*168*	*200*	*69*	*382*	*172*
Bhil (Hindu and Animist) ..	175	221	69	346	189	199	219	64	352	166
Chodhra (Hindu and Animist) ..	143	209	72	383	193	162	199	74	399	166
Dhodia (Hindu and Animist) ..	161	218	73	374	174	170	196	82	393	159
Naikada (Hindu and Animist) ..	145	211	67	374	203	156	216	70	370	188
XII. *The Untouchables (Hindu)* ..	*144*	*209*	*73*	*372*	*202*	*145*	*189*	*72*	*386*	*208*
Bhangi	139	212	75	381	193	139	194	64	404	199
Chamar (Khalpa)	147	220	72	373	188	148	190	75	381	206
Dhed	143	203	72	371	211	145	186	73	384	212
Garoda	148	216	80	352	204	141	190	75	375	219
XIII. *Religious Mendicants*	*87*	*144*	*64*	*413*	*292*	*116*	*179*	*73*	*377*	*255*
Bava	81	129	65	425	300	118	176	80	374	252
Musalman	**116**	**187**	**73**	**387**	**237**	**127**	**179**	**70**	**392**	**232**
I. *With foreign strain*	*107*	*168*	*69*	*414*	*242*	*123*	*166*	*62*	*406*	*243*
Pathan	102	163	66	427	242	126	166	58	413	237
Saiyad	116	174	77	395	238	121	169	72	402	236
Shaikh	107	167	69	414	243	123	164	61	404	248
II. *Local Converts*	*124*	*200*	*75*	*369*	*232*	*129*	*186*	*75*	*383*	*227*
Ghanchi	118	181	77	390	234	118	183	70	375	254
Meman	129	219	76	361	215	151	203	81	377	188
Vohora	126	207	75	351	241	122	190	76	387	225
III. *Religious Mendicants*	*102*	*165*	*64*	*411*	*258*	*128*	*182*	*65*	*407*	*218*
Fakir	102	165	64	411	258	128	182	65	407	218
Parsi	**95**	**183**	**88**	**340**	**294**	**81**	**134**	**57**	**395**	**333**
Indian Christian	**124**	**150**	**120**	**424**	**182**	**134**	**171**	**133**	**394**	**168**

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SUBSIDIARY TABLE IV—A.—PROPORTION OF CHILDREN UNDER 12 AND OF PERSONS OVER 40 TO THOSE AGED 15-40 IN CERTAIN CASTES ; ALSO OF MARRIED FEMALES AGED 15-40

CASTE	PROPORTION OF CHILDREN BOTH SEXES PER 100		PROPORTION OF PERSONS OVER 40 PER 100 AGED 15—40		Number of married females aged 15—40 per 100 females of all ages
	Persons aged 15—40	Married females aged 15-40	Male	Female	
1	2	3	4	5	6
The Brahmans	69	188	69	70	29
The Warrior class	71	196	54	62	31
Maratha Kshatriya	*59*	*178*	*48*	*63*	*32*
The Writers	87	245	61	61	28
Bards and Actors	72	174	66	72	30
Traders (Hindu and Jain)	69	189	64	65	30
(I) Hindu Vania	*68*	*186*	*66*	*70*	*30*
(II) Jain Vania	*66*	*193*	*64*	*60*	*33*
Agriculturists (Hindu)	75	187	54	58	34
Kanbi Lewa	*70*	*178*	*60*	*63*	*34*
Craftsmen and Artisans (Hindu)	79	186	55	60	34
Kumbhar	*85*	*200*	*50*	*57*	*34*
Labouring Class (Hindu)	87	200	59	54	35
Koli	*90*	*209*	*57*	*53*	*35*
Herdsmen	83	205	53	58	32
Personal Servants	77	177	58	59	34
Early Tribes	98	240	52	45	32
Chodhra (Hindu and Animist)	*91*	*245*	*50*	*42*	*30*
Gamit (Hindu and Animist)	*9*	*256*	*46*	*41*	*30*
The Untouchables (Hindu)	91	198	54	54	35
Dhed	*90*	*192*	*57*	*55*	*35*
Musalman	78	190	61	59	33
(I) With Foreign Strain	69	181	58	60	33
(II) Local Converts	85	196	63	59	33
Vohora	*87*	*190*	*69*	*58*	*33*

SUBSIDIARY TABLE V.—PROPORTION OF CHILDREN UNDER 10 AND OF PERSONS AGED 60 AND OVER TO THOSE AGED 15-40; ALSO OF MARRIED FEMALES AGED 15-40 PER 100 FEMALES

Natural Division	PROPORTION OF CHILDREN BOTH SEXES PER 100						PROPORTION OF PERSONS AGED 60 AND OVER PER 100 AGED 15—40						Number of Married females aged 15-40 per 100 Females of all ages		
	Persons aged 15—40			Married Females aged 15-40			1921		1911		1901				
	1921	1911	1901	1921	1911	1901	Male	Female	Male	Female	Male	Female	1921	1911	1901
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Baroda State..	**69**	**60**	**50**	**167**	**145**	**135**	**11**	**13**	**8**	**10**	**6**	**9**	**33**	**37**	**34**
Central Gujarat ..	65	56	45	157	135	122	12	14	8	11	6	8	34	39	36
Baroda City ..	48	44	39	132	119	117	11	16	10	15	8	14	35	35	33
North Gujarat ..	71	61	49	172	148	129	10	12	7	8	5	7	33	37	35
South Gujarat ..	71	68	67	170	158	171	11	11	10	11	8	11	33	36	32
Kathiawad ..	75	61	53	183	146	181	12	16	9	12	6	9	32	37	29

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SUBSIDIARY TABLE V-A.—Proportion in certain religions of children under 10 and of persons aged 60 and over to those aged 15-40; also of married females aged 15-40 per 100 females

Religion and Natural Division	Proportion of children both sexes per 100						Proportion of persons aged 60 and over per 100 aged 15-40						Number of Married females aged 15—40 per 100 females of all ages		
	Persons aged 15—40			Married females aged 15—40			1921		1911		1901				
	1921	1911	1901	1921	1911	1901	Male	Female	Male	Female	Male	Female	1921	1911	1901
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Baroda State															
All Religions ..	69	60	50	167	145	135	11	13	8	10	6	9	33	37	34
Hindu	68	59	49	165	143	131	11	13	8	10	5	8	34	38	35
Animist	80	80	67	205	184	172	8	7	7	7	8	10	31	37	33
Musalman ..	65	59	50	156	143	137	14	15	10	12	7	11	33	37	33
Jain	57	52	43	150	141	123	14	16	10	14	7	11	30	32	33
Parsi	54	59	55	158	161	124	31	27	24	24	17	22	22	24	32
Central Gujarat															
All Religions ..	65	56	45	157	135	122	12	14	8	11	6	8	39	34	36
Hindu	65	55	45	157	133	121	12	14	8	11	5	8	34	40	37
Musalman ..	62	56	45	153	138	146	13	15	9	11	6	10	34	38	30
Baroda City ..															
All Religions ..	48	44	39	132	119	117	11	16	10	15	8	14	35	35	33
Hindu	49	44	38	132	118	115	11	16	10	15	7	13	35	37	33
Musalman ..	46	47	46	128	122	122	13	17	10	16	10	16	35	38	36
North Gujarat ..															
All Religions ..	71	61	49	172	148	129	10	12	7	8	5	7	33	37	35
Hindu	72	62	49	174	149	130	10	12	7	8	5	7	33	38	36
Musalman ..	67	59	47	160	145	125	13	13	9	9	5	8	33	37	35
South Gujarat															
All Religions ..	71	68	67	170	158	171	11	11	10	11	8	11	33	36	32
Hindu	66	66	62	146	150	159	13	13	10	11	7	10	36	37	33
Musalman ..	66	66	63	149	147	150	17	16	15	14	12	18	33	35	31
Kathiawad ..															
All Religions ..	75	61	53	183	146	181	12	16	9	12	6	9	32	37	29
Hindu	74	60	52	182	144	158	12	14	9	11	6	9	32	38	29
Musalman ..	82	73	57	183	164	159	16	17	13	13	6	11	33	36	32

SUBSIDIARY TABLE VI.—Variation in population at certain age-periods

Natural Division	Period	Variation per cent. in population (increase + and decrease—)					
		All ages	0-10	10-15	15-40	40-60	60 and over
1	2	3	4	5	6	7	8
Baroda State ..	**1891—1901**	**— 19·2**	**— 35·6**	**+ 1·1**	**— 12·4**	**— 14·7**	**— 40·6**
	1901—1911	**+ 4·1**	**+ 22·**	**— 28·4**	**+ 2·2**	**+ 4·9**	**+ 20·9**
	1911—1921	**+ 4·6**	**+ 6.1**	**+ 42·5**	**— 7·1**	**+ 8·7**	**+ 23·0**
Central Gujarat ..	1891—1901	— 22·9	— 38	— 2·3	— 17	+ 3·3	— 42 4
	1901—1911	+ 8·75	+ 29·6	— 26·4	+ 4.5	— 14·9	+ 47.4
	1911—1921	+ 4·3	+ 6·0	+ 49·7	— 8.6	+ 9·2	+ 21·7
Baroda City	1891—1901	— 10·9	— 16	+ 11·8	— 11.9	— 6·7	— 29·7
	1901—1911	— 4·3	+ 6·9	— 19	— 4.2	— 11·4	+ 12·9
	1911—1921	— 4·7	— 2·1	+ 17·9	— 10.0	— 4·7	— 4·2
North Gujarat ..	1891—1901	— 24·1	— 43·1	— 7·9	— 13·1	— 11·7	— 51·9
	1901—1911	— 0·3	+ 21·2	— 35·4	— 2·9	+ 2·5	+ 19·7
	1911—1921	+ 8·2	+ 9·6	+ 53·6	— 5·6	+ 12·9	+ 39·1
South Gujarat ..	1891—1901	— 6	— 19·6	+ 10·3	+ 0·2	— 0·5	— 9·2
	1901—1911	+ 11·6	+ 16·1	— 4·6	+ 13·8	+ 8·7	+ 19·9
	1911—1921	+ 1·5	+ 0·1	+ 14·5	— 3·8	+ 7·9	+ 6·5
Kathiawad	1891—1901	— 3·8	— 25·8	+ 55·2	— 4·5	+ 15·8	— 36·9
	1901—1911	+ 2·79	+ 23·0	— 41·3	+ 5·6	— 0·5	+ 48·1
	1911—1921	— 0·1	+ 5·1	+ 46·2	— 13·5	— 2·7	+ 19·0

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SUBSIDIARY TABLE VII.—Reported birth-rate by sex and natural division

Year	Number of births per 1,000 of total population (Census of 1911)									
	Baroda State		Central Gujarat		North Gujarat		South Gujarat		Kathiawad	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1	2	3	4	5	6	7	8	9	10	11
1910–11 ..	26·8	25·9	24·9	24·9	25·4	23·8	31·2	29·5	33·3	32·2
1911–12 ..	29·3	28·4	29·0	29·5	26·1	24·3	35·9	33·7	33·2	33·2
1912–13 ..	26·8	25·8	26·3	26·3	25·5	23·5	30·5	29·2	28·3	28·0
1913–14 ..	31·4	30·5	28·7	28·9	31·5	30·0	33·1	31·1	39·1	37·7
1914–15 ..	31·2	30·0	29·0	29·2	30·7	28·1	32·0	31·0	40·9	40·4
1915–16 ..	32·1	30·7	31·1	31·4	30·6	27·9	33·8	32·5	39·7	37·5
1916–17 ..	31·5	30·2	30·2	29·9	29·8	27·4	34·9	33·3	39·0	38·6
1917–18 ..	30·7	29·2	28·7	28·4	29·7	27·8	33·0	30·7	38·4	35·5
1918–19 ..	23·5	22·7	21·9	22·4	23·2	21·5	25·3	23·9	27·7	27·2
1919–20 ..	27·5	26·4	27·3	27·0	26·5	24·7	28·4	27·9	31·4	29·8

SUBSIDIARY TABLE VIII.—Reported death-rate by sex and natural division

Year	Number of deaths per 1,000 of total population (Census of 1911)									
	Baroda State		Central Gujarat		North Gujarat		South Gujarat		Kathiawad	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1	2	3	4	5	6	7	8	9	10	11
1910–11 ..	25·2	24·5	27·5	29·2	22·5	20·7	27·7	26·6	23·5	21·4
1911–12 ..	23·2	21·8	25·4	25·8	19·7	16·9	26·5	25·7	24·5	23·5
1912–13 ..	26·3	25·5	25·0	26·7	27·1	24·5	23·3	22·3	33·1	31·6
1913–14 ..	25·5	24·2	27·5	28·6	23·1	20·3	26·7	25·0	27·0	24·2
1914–15 ..	23·3	22·2	25·9	27·6	20·5	17·6	25·8	24·4	21·9	19·0
1915–16 ..	24·0	22·7	28·7	28·7	21·3	19·1	23·0	22·5	19·7	18·2
1916–17 ..	27·3	25·9	28·9	29·4	25·5	22·3	28·2	27·8	27·7	26·5
1917–18 ..	39·0	41·0	39·4	44·9	41·5	41·8	31·0	30·4	40·1	43·2
1918–19 ..	62·9	64·1	60·4	61·1	59·5	59·0	69·7	71·4	77·3	85·0
1919–20 ..	27·6	25·5	29·5	28·6	25·7	22·2	25·5	24·8	33·0	30·4

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SUBSIDIARY TABLE IX.—Reported death-rate by sex and age in decade and in selected years per mille living at same age according to the Census of 1911

Age	Average of Decade (Absolute figures)		Average of decade (Proportional figures)		1912—13		1914—15		1917—18		1918—19	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1	2	3	4	5	6	7	8	9	10	11	12	13
All ages	32,146	29,059	30·4	29·8	26·3	25·5	23·3	22·2	39·0	41·0	62·9	64.1
Under 1 year	5,934	5,115	142·6	125·8	145·2	131·3	128·2	112·6	144·8	132·4	162·4	145·0
1—5	6,379	5,732	55·2	49·2	62·9	57·2	41·3	36·0	50·5	48·9	93·4	82·0
5—10	1,723	1,582	14·3	15·5	11·8	12·3	9·8	9·6	22·3	27·8	30·9	34·6
10—15	1,057	1,041	10·7	12·9	6·5	7·4	6·3	8·2	24·1	34·5	27·1	30·6
15—20	1,022	1,017	10·9	13·5	6·8	8·2	7·1	8·1	18·9	21·2	31·8	36·8
20—30	3,353	3,516	16·2	17·7	10·1	10·9	10·1	11·0	23·3	25·0	55·5	61·8
30—40	3,321	3,228	20·3	21·3	12·8	12·6	13·4	13·7	29·8	33·1	61·5	60·7
40—50	3,083	2,307	27·2	22·1	20·1	15·3	21·0	15·9	38·0	37·0	65·7	55·4
50—60	2,820	2,105	43·8	35·2	35·4	27·3	38·1	28·4	61·8	53·1	81·5	72·5
60 and over	3,455	3,417	91·6	80·0	80·0	72·5	78·8	69·6	119·0	108·2	141·2	123·9

SUBSIDIARY TABLE X.—Reported deaths from certain diseases per mille of each sex.

Year	Whole State					Actual number of deaths in									
	Actual number of deaths			Ratio per mille of each sex		Central Gujarat		City		North Gujarat		South Gujarat		Kathiawad.	
	Total	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cholera															
1910—11 ..	292	144	148	0·14	0·15	111	109	15	15	16	20	2	1	..	3
1911—12 ..	187	94	93	0·09	0·1	29	28	10	7	7	12	45	44	3	2
1912—13 ..	805	379	426	0·36	0·44	17	37	42	35	235	271	60	58	25	25
1913—14 ..	146	91	55	0·09	0·06	45	21	5	1	22	15	18	18	1	..
1914—15 ..	405	217	188	0·21	0·19	13	13	2	..	68	61	133	113	1	1
1915—16 ..	2,243	1,135	1,108	1·1	1·13	958	908	85	80	73	91	15	27	4	2
1916—17 ..	1,313	638	675	0·6	0·69	301	318	16	11	130	137	42	37	149	172
1917—18 ..	281	142	139	0·13	0·14	20	31	1	..	117	105	3	3	1	..
1918—19 ..	1,559	795	764	0·75	0·78	Dist	rict	fig	ures co	mbined	with I	nfluenz	a *vide*	infra	
1919—20 ..	200	107	93	0·1	0·1	48	50	11	5	7	5	31	24	10	9
Small-pox															
1910—11 ..	1,175	655	520	0·62	·53	130	84	26	21	338	·286	31	27	130	102
1911—12 ..	1,882	975	907	0·92	·93	287	225	19	20	294	276	91	78	284	308
1912—13 ..	454	213	241	0·2	·25	26	26	..	5	127	147	53	55	10	8
1913—14 ..	474	251	223	0·24	·23	18	17	34	46	119	100	52	40	28	20
1914—15 ..	195	109	86	0·1	·09	21	8	2	6	73	67	9	4	4	1
1915—16 ..	1,502	755	747	0·72	·76	107	98	76	74	497	500	59	58	16	17
1916—17 ..	2,543	1,352	91	1·28	1·22	645	565	48	65	135	116	481	413	43	32
1917—18 ..	834	425	40.	0·4	·42	37	34	2	3	52	62	35	28	209	282
1918—19 ..	874	467	407	0·44	·42	111	86	24	19	175	168	36	22	121	112
1919—20 ..	377	197	180	0·19	·18	18	17	3	4	125	119	10	12	41	28
Fever															
1910—11 ..	35,388	18,712	16,676	17·7	17·1	5,730	5,192	709	732	7,357	6,194	3,379	3,202	1,537	1,356
1911—12 ..	33,581	18,024	15,557	17·1	15·9	5,216	4,622	714	695	7,386	5,877	3,320	3,072	1,388	1,201
1912—13 ..	41,206	21,761	19,445	20·6	19·9	5,440	5,066	658	754	10,311	8,596	2,885	2,793	2,467	2,230
1913—14 ..	39,196	20,896	18,300	19·8	18·7	6,027	5,430	673	716	8,835	7,338	3,499	3,240	1,862	1,576
1914—15 ..	35,190	18,767	16,423	17·8	16·8	5,496	5,026	573	669	7,930	6,389	3,243	3,072	1,519	1,267
1915—16 ..	31,084	16,505	14,579	15·6	14·9	4,870	4,301	569	575	7,221	5,987	2,714	2,694	1,131	1,022
1916—17 ..	37,138	19,648	17,490	18·6	17·9	5,498	4,951	549	506	9,205	7,676	2,888	2,929	1,508	1,428
1917—18 ..	38,788	20,022	18,766	19·0	19·2	5,535	5,340	524	554	9,205	8,202	3,212	3,203	1,546	1,467
1918—19 ..	40,331	21,176	19,155	20·1	19·6	5,812	5,267	578	559	9,190	8,012	3,992	3,881	1,604	1,430
1919—20 ..	43,717	23,499	20,218	22·3	20·7	7,174	6,075	698	612	9,928	8,112	3,343	3,328	2,356	2,091
Dysentery and Diarrhœa															
1910—11..	1,034	567	467	0·54	0·48	315	242	38	29	59	41	94	103	61	52
1911—12..	998	570	428	0·54	0·44	288	196	47	51	48	35	119	100	68	40
1912—13..	1,462	789	673	0·75	0·69	285	248	85	68	194	159	110	89	115	100
1913—14..	981	571	410	0·54	0·42	259	159	43	39	89	61	119	117	61	34
1914—15..	893	487	406	0·46	0·42	179	151	52	25	54	52	146	139	56	39
1915—16..	1,404	821	643	0·78	0·66	353	225	64	44	172	163	151	132	81	79
1916—17..	1,450	806	644	0·76	0·66	275	227	37	23	204	156	129	133	161	105
1917—18..	1,422	798	624	0·76	0·64	226	193	61	43	193	138	158	123	100	127
1918—19..	929	527	402	0·5	0·41	204	144	45	36	94	59	117	112	67	51
1919—20..	1,061	592	469	0·56	0·48	184	146	49	23	116	85	109	101	134	114

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SUBSIDIARY TABLE X.—Reported deaths from certain diseases per mille of each sex—(*continued*)

Year	Whole State					Actual Number of Deaths in									
	Actual number of deaths			Ratio per mille of each sex		Central Gujarat		City		North Gujarat		South Gujarat		Kathiawad	
	Total	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Plague															
1910—11 ..	4,926	2,460	2,466	2·3	2·52	684	698	6	5	1,274	1,268	467	477	29	18
1911—12 ..	876	428	448	0·41	0·46	175	193	7	4	23	15	203	215	20	18
1912—13 ..	310	159	151	0·15	0·15	87	89	1	1	3	..	68	61	..	..
1913—14 ..	1,220	597	623	0·57	0·64	269	317	12	14	142	112	81	76	93	104
1914—15 ..	1,294	629	665	0·1	0·68	446	471	97	95	11	9	13	42	32	48
1915—16 ..	224	106	118	0·6	0·12	28	33	21	18	7	7	49	60	1	..
1916—17 ..	859	457	402	0·43	0·41	80	67	9	4	5	1	358	329	4	
1917—18 ..	27,460	13,296	14,164	12·6	14·5	3,447	3,725	1,151	1,202	6,852	7,129	854	850	1,022	1,258
1918—19 ..	1,031	477	554	·45	0·57	282	305	..	..	90	112	58	71	47	66
1919—20 ..	42	28	14	0·03	0·01	12	12	..	..	3	2	7	..	6	..
Influenza															
1910—11 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1911—12 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1912—13 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1913—14 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1914—15 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1915—16 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1916—17 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1917—18 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1918—19 ..	71,472	36,222	35,250	34·3	36·33	10,124	8,590	1,256	1,279	14,741	14,492	6,318	6,654	4,578	5,019
	These are the combined figures of Influenza and Cholera.														
1919—20 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pneumonia															
1910—11 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1911—12 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1912—13 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1913—14 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1914—15 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1915—16 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1916—17 ..	251	150	101	0·14	0·10	69	55	5	5	15	13	35	18	26	10
1917—18 ..	376	205	171	0·19	0·18	69	50	15	21	29	32	42	33	50	35
1918—19 ..	2,049	1,056	993	1·0	1·02	247	202	4	2	81	69	455	468	269	252
1919—20 ..	604	337	267	0·32	0·27	83	69	4	3	40	22	107	100	103	73
All other Causes															
1910—11 ..	7,716	4,027	3,689	3·8	3·8	1,721	1,556	636	658	562	558	709	617	399	320
1911—12 ..	8,326	4,415	3,911	4·2	4·6	1,817	1,511	734	670	668	613	712	761	484	356
1912—13 ..	8,423	4,458	3,965	4·2	4·1	1,830	1,492	714	717	725	759	767	650	422	347
1913—14 ..	8,535	4,542	3,993	4·3	4·1	1,908	1,582	810	790	653	600	746	663	435	358
1914—15 ..	8,340	4,445	3,895	4·2	4·0	1,757	1,545	877	810	622	566	787	686	402	288
1915—16 ..	11,065	6,041	5,024	5·7	5·1	2,410	1,875	998	930	1,153	997	930	774	580	448
1916—17 ..	10,651	5,788	4,863	5·5	5·0	2,192	1,815	891	791	1,212	941	839	772	654	544
1917—18 ..	12,027	6,255	5,772	5·9	5·9	2,149	1,815	1,242	1,315	1,290	1,266	965	810	609	566
1918—19 ..	10,887	5,788	5,099	5·5	5·2	2,391	1,954	1,104	1,099	1,054	976	824	668	415	402
1919—20 ..	8,037	4,416	3,621	4·2	3·7	1,710	1,329	831	783	784	639	709	560	382	410

SUBSIDIARY TABLE XI.—Infantile Mortality

Natural Division	1911—1920							Total number of Deaths	Percentage of Deaths under one year to total deaths (both sexes)
	Number of Births		Number of Deaths under one year		Percentage of Deaths under one year to Births				
	Male	Female	Male	Female	Male	Female	Total		
1	2	3	4	5	6	7	8	9	10
Baroda State	**307,164**	**273,226**	**59,338**	**51,147**	**19·3**	**18·7**	**19·0**	**612,055**	**18·7**
Central Gujarat (including City)	101,851	88,718	22,140	19,445	21·7	21·9	21·8	222,462	18·7
Central Gujarat (exclusive of City)	91,159	78,967	18,382	16,003	20·2	20·3	20·2	185,524	18·5
City	10,692	9,751	3,758	3,442	35·1	35·3	35·2	36,938	19·5
North Gujarat	119,216	104,833	20,381	16,940	17·1	16·2	16·7	229,532	16·3
South Gujarat	53,838	50,307	9,974	8,862	18·5	17·6	18·1	102,056	18·5
Kathiawad	32,259	29,368	6,843	5,900	21·2	20·1	20·7	58,005	22·0

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PART II

Actuarial Report

205. Introductory—In Part I a general analysis was made with the crude age returns. In this Part, I propose to subject the statistics to an actuarial analysis and to prepare therefrom mortality tables for the State.

206. General Characteristics of the period under consideration—The proper method to be adopted in the construction of a mortality table depends upon the characteristics of the period under consideration. A correct knowledge of these is quite essential before proceeding with the construction of the table. It is an obvious fact that the age constitution of census returns is much disturbed by the effects of serious famines and pestilences prevailing during the decennium under consideration.

(*a*) *Census of 1901*—The census of 1901 followed almost immediately the severe famine of 1899 which affected the whole of the Baroda State. The effect of this terrible misfortune was conspicuously evident in the census of 1901 which returned an abnormally low number of infants, and children in the first year of age, as a natural outcome of the poor birth-rate that ought to have prevailed during the famine days. The total population returned in that census shows an enormous decrease of 19·2 per cent. being almost 463,000 less than the total population returned at the preceding census. This decrease is attributable solely to the havoc worked upon the population by the famine of 1899-1900. The decennium following the 1901 census though free from such a wide-spread calamity as the great famine of 1899-1900 is not such a prosperous record as to bring about a rapid reclamation of the ruin which the preceding decade had involved. The population just emerging out of the severe famine above referred to, with its vitality reduced to a minimum had to face a series of lean and dry years commencing from 1901. It was particularly unfortunate that these years of scarcity should have come one after another at the beginning of the decennium so as to hamper considerably the convalescence of the emasculated population. It is a known fact that famines specially victimise the very young and the very old and also those of feeble constitution among the adults. The remnant population after a severe famine being composed almost entirely of healthy persons at their reproductive ages has been observed to more than amply compensate for the shatter among their ranks worked upon by the unhappy visitation. So did Bombay and Madras after the severe famine that affected these Provinces in 1876—1877. Such would have been the case with Baroda State also, but for the serious handicap of lean and dry years commencing from 1901, above referred to. In consequence the census of 1911 instead of recording a happy recovery of at least the lost ground puts in only for a 4·1 per cent. increase. From the point of view of a healthy mortality table it is not the number of people returned that is important, but a smooth progression in the series representing the population returned at successive ages. From an examination of the corrected census returns of 1911 grouped in quinary ages I was able to infer that the decade 1901—1911 in spite of its very sparing prosperity and the consequent poor increase it recorded, gave enough time to smooth down as much as possible the hills and valleys noticeable in the population curve of 1901, except for a very deep depression in the 10-15 age period. This depression represents the survivors of the poor births that ought to have prevailed in the dark days of 1899—1900. For the purpose of my investigation I take the Census return of 1911 a normal one.

(*b*) *1911—1921*—The decade 1911—1921 began with better prospects and might perhaps have realised the recovery which the preceding decennium failed to do. But that was not to be. The prices of the necessities of life were forced up beyond any previous famine record in consequence of the great European War, thus compelling the poorer and lower middle classes that formed the bulk of the population to lead a very economical life, contenting themselves with a bare margin of subsistence. This state of things in addition to resulting in poor vitality is not also conducive to large families. Added to this there came a severe visitation of the Plague in 1917, and as if people had not suffered enough, on its heels followed Influenza in the next year. Appearing in three principal waves or phases the disease was soon in evidence in all parts of this State. The recorded deaths

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from this cause numbered 71,472. It has been estimated that 55 per mille of the total population represents the toll of lives taken by this epidemic in India. At this rate influenza mortality would have meant 111,804 deaths, calculated on the population of 1911. No detailed investigation seems to have been made as to the age incidence of this disease in India. But the supplement to the Eighty First Annual Report of the Registrar General of Births, Deaths and Marriages, contains a Report on the Mortality from influenza in England and Wales during the epidemic of 1918-1919. I have had no opportunity of seeing the original but have read a Review of the same in the Quarterly Publication of the American Statistical Association, June, 1921. To quote the Reviewer :—

"The type of Influenza which occurred during the first twenty five weeks of 1918 seemed to affect chiefly young children and old people ; but toward the end of June an abrupt shift in the age incidence of this disease occurred. A sudden increase in the proportion of deaths at the age group 15 to 24 years was observed ; then as the summer epidemic approached to peak, the age ranges between 25 and 35 years were most effected. The same phenomenon of an increase in the proportion of deaths in adolescence was noted at the outbreak of the autumnal and most violent phase of the epidemic. During the week of maximum death rate, the week ended November 9, the proportion of deaths was highest in the age division 20 to 30 years."

It thus appears that this disease unlike other epidemics seems to have specially affected the periods of youth and middle age particularly in its most intense stages.

(c) *The Last Decade Abnormal*—Quite synchronously with influenza, Baroda State also passed through a period of widespread famine of an intensity only less than that of 1899—1900. The census of 1921 indeed recorded an increase of 4·6 per cent. or a little larger rate than that obtaining in the previous decennium ; but as I have mentioned before it is not the number of people that gives a healthy mortality table, but a smoothness in the numbers registered at successive ages, which was not the case in the 1921 census return. As a result of the cumulation of these adverse circumstances, the age curve shows all kinds of creeks and capes. For the purpose of my investigation I take the 1921 census return as an abnormal one disturbed by many unwholesome factors.

207. The method of constructing a Normal Mortality Table —The age-tables and rates of mortality for both males and females at the censuses of 1881, 1891, 1901 and 1911 were prepared for the whole of India and the major Indian Provinces by the late Sir G. F. Hardy, K. C. B., F. I. A., and the late Mr. T. G. Ackland F.I.A. Their methods may be briefly described. Their normal procedure was to construct an average mortality table whenever the census returns revealed a violent disturbance of the age distribution of the population recorded, caused by famines and pestilences prevailing in the preceding decennium. The average Mortality Table was constructed by combining two normal census returns with two others where disturbances due to famines and epidemics were evident. If however the census followed a prosperous decade with a high birth-rate, a combination of that census return with the one preceding was deemed sufficient to supply the statistical material as the basis for the construction of the mortality table. The object aimed at in constructing the average mortality table is to minimise or eliminate as much as possible any effects that epidemics may have on the age distribution and to produce a mortality rate which may be taken as normal without these disturbing factors. The average mortality table should really give the experience as averaged over a long series of years while the other table gave that of the decennium under consideration. The 1881 and 1901 censuses immediately succeeded periods of famine and high mortality. Under these circumstances Sir Geo. Hardy thought it fit to construct the average mortality table in connection with these censuses. The 1891 and 1911 censuses dealt with periods generally free from famines. Sir Geo. Hardy for the former and Mr. Ackland for the latter constructed mortality tables embodying the experience of the inter-census period only which was considered quite normal. For reasons detailed above I have thought it advisable to construct average mortality tables for the Baroda State with the census returns of 1901, 1911 and 1921 giving double weight to the 1911 return.

208. Data in hand—I have had access to the following data for the purpose of my investigation.

(1) The Baroda State Census Returns of 1901, 1911, 1921 showing for each sex the numbers living at each individual age.

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(2) Migration returns showing the disturbance due to migrations.

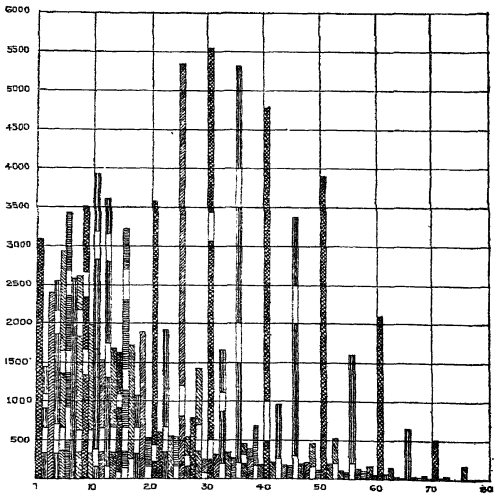
(3) The vital statistics over the period 1911—1921 showing in each year and for each sex the total number of births and deaths, the latter in quinary groups.

(4) I have also had access to Sir George Hardy's "Memorandum on the age tables and rates of mortality of the Indian Census of 1901" and to Mr. T. G. Ackland's "Actuarial Report" on the Indian Census of 1911.

209. Errors of age—The Baroda State Census return of 1921 reveals the errors in age which are inherent to population statistics of all countries particularly India. The public mind is not yet sufficiently educated to perceive the utility and necessity of giving correct ages.

Accidental Errors—The irregularities above referred to are of two kinds. There are what are called accidental errors due mostly to ignorance and carelessness through which people give their ages as multiples of 5 or 10. This tendency to return quinary ages is marked from census to census in all countries. So recent a census as that of 1911 of the population in England and Wales though showing a marked improvement over the preceding ones is not completely free from it. Hence it is no surprise that this defect is perceptible to a very high degree in the Indian Censuses. We can only rest satisfied with the hope that the spread of education among the masses would cure to a great extent succeeding censuses of this serious handicap. But the present one is full of this defect. The diagram attached below exhibits in a graphic way to what large extent this tendency has distorted the smoothness of the age-curve.

Diagram showing inaccuracies of Age-returns.



Among other accidental errors might be classed those by which the people evince a marked partiality for certain ages as 8 and 12. The following table shows the order in which the numbers ending in certain digits are popular :—

SHOWING THE NUMBERS, OUT OF A TOTAL OF 1,000 MALES RETURNED IN RESPECT OF EACH DIGIT OF AGE

0	1	2	3	4	5	6	7	8	9	Digit of age recorded in Census.
275	44	113	55	57	232	58	52	82	32	Numbers per 1000 recorded in respect of each digit of age.
(1)	(9)	(3)	(7)	(6)	(2)	(5)	(8)	(4)	(10)	

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An examination of the above table will show that 275 per mille or more than a fourth of the whole have returned their ages ending at digit 0 (that is 0, 10, 20, 30 etc.) while 232 per mille or nearly one fourth have been returned at ages ending in the digit 5 (that is 5,15, 25 etc). Quinary and decennial ages absorb more than a half of the total population leaving less than a half in respect of the other 80 ages which are neither multiples of 5 or 10. Among the ages ending in other digits, even numbers, taken in the order 2, 8, 6, 4 are preferred to numbers ending in odd digits, so that 310 per mille or nearly a third are returned at these numbers. Among individual ages other than quinary and decennial ages, 12 and 8 seem to be in great favour, the former returning 36 per mille of the male population and the latter 35 per mille of the same. Ages ending in odd digits are preferred in the following order 3, 7, 1, 9, giving a total return of 183 per mille much less than a fifth of the whole recorded number. It is very interesting to observe here, that in giving incorrect ages people have exhibited very accurately the same tendency at every census. For, a comparison of the above table with a similar one constructed for the whole of India with the census returns of 1911 goes to prove that the preferences for particular digits are exhibited in precisely the same order in that census as in the Baroda Census of 1921.

Systematic Errors—In addition to the accidental errors above referred to there are other errors called systematic errors or major deliberate errors noticeable in all census returns. The most important of these present in the Indian Censuses are:—

1. The tendency to understate the age of unmarried girls who have attained maidenhood.
2. The tendency to overstate the ages of young wives having children.
3. The tendency to understate the ages of widows and bachelors that have almost approached the middle of life.
4. The tendency among the old to exaggerate their ages.

Before proceeding to use the population return for the construction of the mortality table it is necessary to remove or at least reduce to a minimum the errors above referred to. The systematic errors though as the name implies occurring systematically cannot be brought under any law which would suggest any method of detection and treatment. A correct knowledge of their magnitude would depend upon a deep social study of the groups of the people among whom they are rife.

It may be possible however to detect the extent of these systematic errors to a certain degree of approximation. For this purpose we compare the numbers returned in any group with those in the group ten years younger returned at the preceding census, of which the former are the survivors. Taking the younger group and making allowance for the deaths that have occurred among them in the decennium according to vital statistics, and the migration disturbance taking place among this group as it moves from one age to another, it may be possible to form a fair estimate of the number of persons of this group expected to survive the decennium. A comparison of this expected number with the actual number returned at the higher age period in the later decennium should throw some light as to the extent of the systematic error. The success of this method depends on the vital statistics being accurately maintained which is not the case in Baroda as we shall see later and even if they be as to numbers, the deaths recorded are susceptible of the same major and minor errors as the population return. Consequently the conclusions arrived at would not be satisfactory. As the method of graduation to be explained later, would remove a major portion of these errors I thought it unnecessary to make any special allowance for these errors suggested by a method which is not entirely satisfactory. The additional accuracy attained thereby would be of a doubtful nature.

210. Method of Correcting Accidental Errors—But the accidental errors can be removed by considering the manner in which they are caused. A man aged 22 for instance may return his age either as 20 or 25. If we collect the numbers returned, in quinary groups 0-4, 5-9, etc., the man who is really aged 22 if he gives his age as 20, will fall in the group 20-24 to which he belongs, but if he gives his age as 25 he will fall in the next adjoining group 25-29. Hence the swelling at each

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quinary age as 20 is composed partly of numbers belonging to the age-group 20-24 and partly of numbers belonging to the next preceding group. Now on the supposition that population moves along from age to age, some dying at each age, it is natural to expect the numbers returned at successive ages to diminish slowly and smoothly if correct ages had been returned. The return at any quinary age like 20 for instance should not be too large as compared with the adjoining ages 19 and 21 and any plumping it exhibits more than the average of the numbers returned at 19 and 21 is error. This error is removed by transferring one half of the excess which the return at any quinary age like 20 exhibits over the mean of the two adjoining ages 19 and 21 to the next lower group 15-19 while the other half is retained in the group 20-24. After applying the above correction, the population is collected in quinary age groups 0-4; 5-9; etc. It might be advanced that there would be even then small local errors. A man aged 22 for instance might return his age as 21 or 24. Since now the individual ages are discarded, and the corrected sum per each quinary group is made the basis for subsequent investigations, the above error does not in any way vitiate the accuracy of the results arrived at, so long as the incorrect age returned falls in the correct quinary group to which it really belongs. If on the other hand the above individual returns his age outside his own group, the error will come under the class of "major deliberate errors" the probability for which is extremely small except in the special group of persons above referred to among whom it is rife.

211. Application of the Method of Columnar differencing shewn.—The above method of correction would be rather laborious to apply to group after group. But it can be expressed as a mathematical formula which lends itself readily to columnar differencing. The following table gives a specimen of how the formula was applied in regard to the crude returns of ages :—

Adjustment for errors of age (Males.)

$$(U_{5n}+U_{5n+1}+U_{5n+2}+U_{5n+3}+U_{5n+4})-\tfrac{1}{2}\left[U_{5n}-\tfrac{1}{2}(U_{5n-1}+U_{5n+1})\right]+\tfrac{1}{2}\left[U_{5n-5}-\tfrac{1}{2}(U_{5n+4}+U_{5n+6})\right]=\Sigma_0^4 U_{5n+t}-\tfrac{1}{4}(\triangle^2 U_{5n+5}-\triangle^2 U_{5n}).$$

Example by Columnar method—Baroda State (Males.)

n	Age (5n+t.)	Ungraduated numbers U_{5n+t}	$\Sigma_0^4 U_{5n+t}$	$\triangle U_{5n}$ $\triangle U_{5n+1}$	$\triangle U_{5n}$	$^2\triangle^{(5)}$	$-\frac{(6)}{4}$	Corrected numbers. (3)+(7)
	1	2	3	4	5	6	7	8
0	0	33,908						
	1	15,893						
	2	26,413	136,686			—14636	+3659	140,345
	3	28,206						
	4	32,176		+5460	—14636			
1	5	37,636		—9176				
	6	28,460						
	7	28,861	155,287			—30647	+7662	162,949
	8	38,526						
	9	21,804		+20156	—45283			
2	10	41,960		—25127				
	11	16,833						
	12	39,825	135,240			+11190	—2798	132,442
	13	18,602						
	14	18,020		+17587	—34093			
3	15	35,607		—16506				
	16	19,101						

NOTE:—A further correction was applied by Sir George Hardy to the first two groups to bring them into a natural progression with others. The correction consists in adding $\frac{1}{4}(U_4+U_6)$ to age group 0-4 and deducting the same quantity from the group 5-9.

Smoothed Age-Curve for 1921.

The corrected quinquennial groups having been obtained for 1921 Census Return in the manner detailed above, I redistributed the population at individual ages graphically and obtained the number in Subsidiary Table I-A attached to Part I of this Chapter, which should very nearly have been the population recorded on the census day 1921 had correct ages been given. The graphs illustrating the smoothed ages for males and females are here inserted facing this page. It is not necessary for the construction of the mortality table to redistribute the 1921 return

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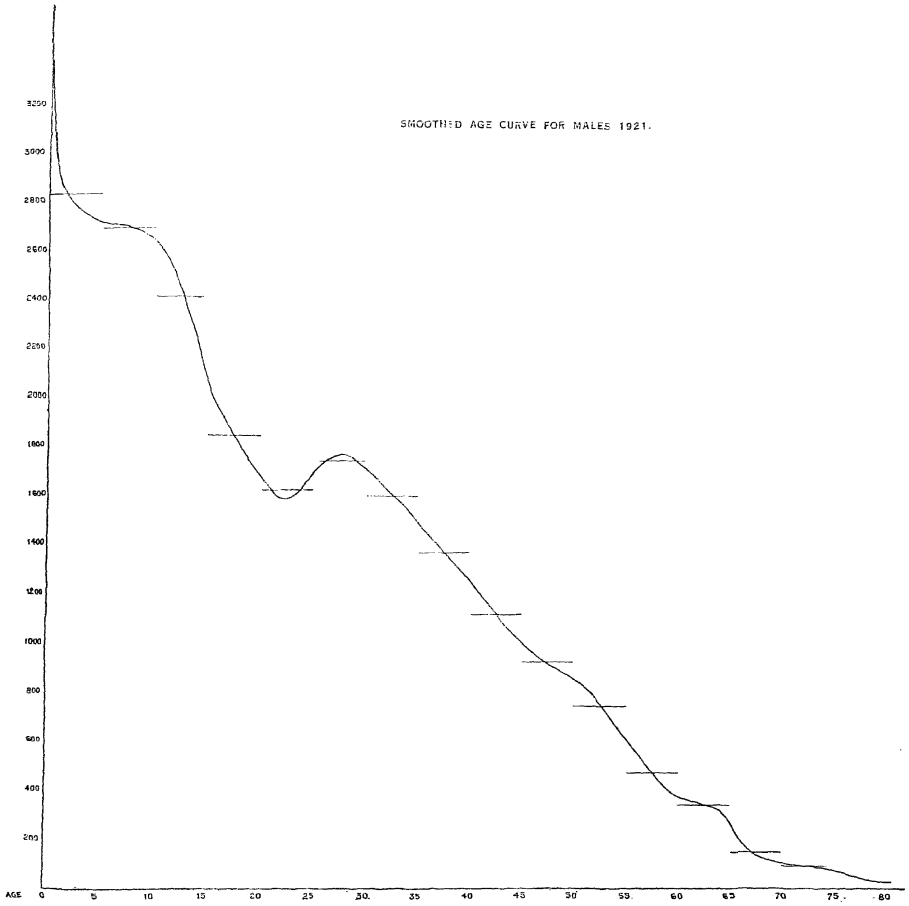

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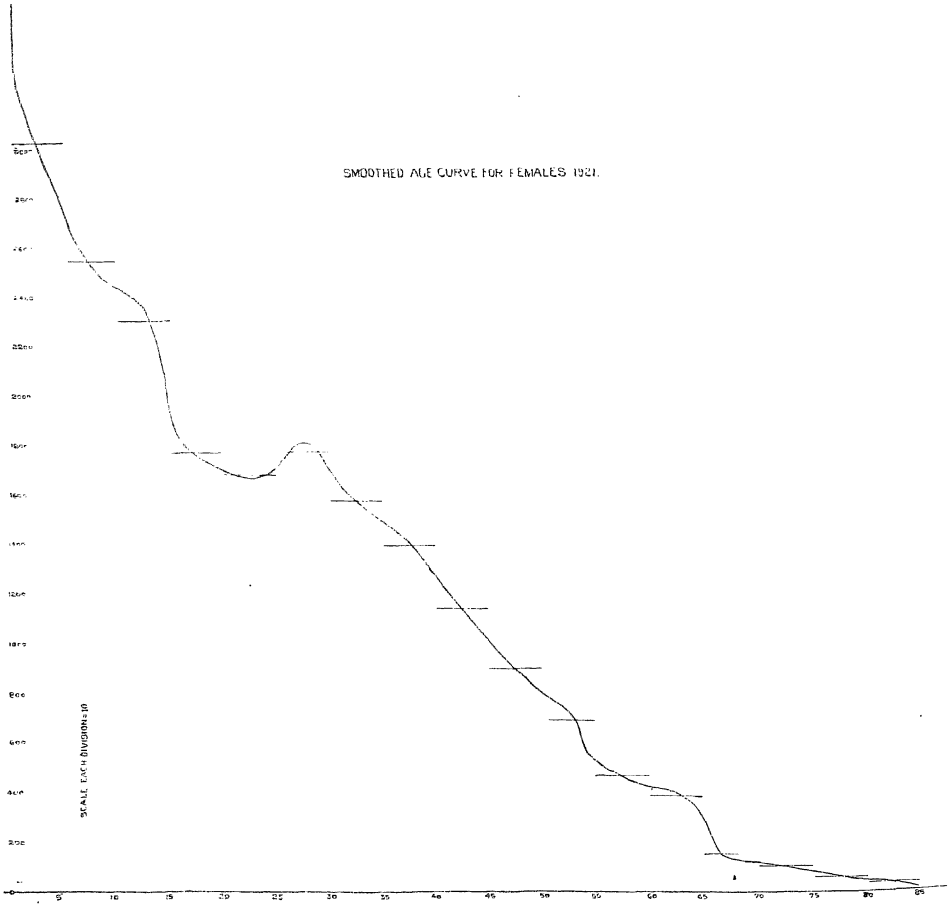

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at individual ages ; the graphs however are required in the census analysis and interesting inferences can be drawn from an inspection of the graphs here. Further they help to show to a certain extent the efficacy of correction for the heaping up at quinary and decennial ages that has been applied. I have observed before that the whole of the Baroda State was under the grip of a very severe famine in 1899-1900. The survivors of the abnormally low number of births that ought to have prevailed during those unfortunate famine days should be aged between 21 and 22 now. These survivors naturally are not expected to be so numerous as they would have been had they been born under quite normal circumstances. Their presence is marked by a very deep gulf in the graphs for both males and females in the age period 20-24. When a particular age is affected for any reason, it is a known fact that the adjoining ages also will be affected to some extent sympathetically. So the depression is seen where it ought to have been. This very depression was noticeable in the 1911 return in the age period 10-14, after the same was corrected for maccuracies of age as detailed above. But for the correction applied above our attention would not have been drawn to this particular depression, as this had got mingled up in the several ups and downs noticeable in the uncorrected return because of the heapings at particular ages. After correction the population curve moves along smoothly from age to age carrying with it the deep scar from the severe wound it received in those dark days. As for this depression, it may move along the curve a few decenniums more or may even pass out of observation before it has travelled the full length of the curve, just as we are not able to trace in the population curve of to-day symptoms of famines that had happened prior to 1899. One reason for its disappearance will be that the cavity may get filled up in the "major deliberate errors" the range of which is indeed very large near the middle of life. Secondly the children born during famine days are mostly the offspring of the better and economically more efficient classes who are expected to live under very healthy circumstances and environments calculated to give them higher vitality than the general population. Consequently the survivors among them after some decenniums may become as numerous as the survivors among the offspring of the general population under normal conditions.

212. Migration—The next step in the construction of the Mortality Table is to adjust the corrected age groups for disturbances due to migration. Where the difference between the numbers of emigrants and immigrants is considerable as compared with the mean population of the decade, some effect upon the censal age distribution is to be expected. This disturbance if occurring at a particular age period, can be noticed by an obvious excess or deficiency of the numbers enumerated in that period, provided such an anomaly cannot be explained away by other causes, such as misstatements of age especially in the case of women who would like to be in their teens for a longer period than they ought to. If no adjustment be made for the disturbance due to migration at the proper age periods, from tables of birth place returns received from other provinces and states, the process of graduation to be applied later may not be able to reveal accurately the mathematical law followed by the population curve.

MIGRATION 1911—1921

Year	Immigrants			Emigrants		
	Males	Females	Total	Males	Females	Total
1921	97,466	135,028	232,494	96,992	123,704	220,696
1911	90,017	132,940	222,957	95,522	140,001	235,523

The balance of migration is 5,979 for males and 18,385 for females in favour of the State. As these numbers are only slightly more than 1 per cent. of the mean male and female population respectively, the age distribution of the population would not be appreciably affected. I have therefore made no allowance for Migration disturbance.

213. Computation and Graduation of Mean Census Figures—The process of correction for age inaccuracies was applied to the 1901, 1911 and 1921 census returns and the resulting quinary groups were proportioned for, relative to a

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total population of 100,000 of each sex. These groups were set side by side and their mean values obtained giving double weight to the 1911 return as set out in Table A. We have next to graduate these mean numbers. The rationale and justification for graduating any statistical return consists in our having good reason to believe, that when a large body of facts are analysed, a smooth and continuous curve can be found to represent the general trend of the observation provided true values are ascertainable throughout. In practice of course the data can never reach infinite extent and are susceptible of errors due to accidental causes. Hence the following types of errors superimpose the true smooth progression of the numbers and cover it up like crust.

1. Irregularities due mainly to the paucity of the raw material.
2. The "systematic errors" or "major deliberate errors" above referred to which are left yet untouched.
3. Such other ups and downs in the progression of the quinary groups due to famines and pestilences, which the combination of two normal census returns with two other abnormal ones, has not been able to smooth down entirely.

The object of graduation is to eliminate these errors and if that is not possible to remove the major portion of these and disperse the rest so as to obtain as close an approximation as possible to the smooth and regular series that would be produced if correct and infinite data were available.

The process of graduation employed by Sir George Hardy was to use the formula

$$\log N_x = A + B_x + C_x^2 + Mc^x.$$

a form suggested by Makeham's second modification of Gompertz's law for the force of mortality. N_x here represents the population above age x. Mr. Ackland employed the comparatively more modern method of graduation by frequency curves. With respect to this method it might be observed that Sir George Hardy was the first to bring to the notice of the Actuarial profession the elegant and practical applicability of Professor Karl Pearson's Methods of curve-fitting on modern statistical principles for the graduation of statistical returns. As I wanted to compare the mortality functions, obtained for the Baroda State now with those obtained by Mr. T. G. Ackland in the last Census for the Bombay Presidency, with which Baroda State may be expected to fall almost in line, I have thought it advisable to adopt the same method of Graduation (by frequency curves) as that of Mr. Ackland, so that the comparability of my table with his may not be affected. It is not possible to detail here the elaborate process which the method involved. Suffice it to say that the mean numbers were graduated by Type I of the system of curves attributed to Prof. Karl Pearson. The equation to the curve for graduating at unit intervals of age was found to be :—

$$y = \cdot 00602549\ x^{\cdot 432667}\ (93.47793 - x)^{2\cdot 686686}.$$

Table *A* gives the graduated mean numbers in quinary age groups and Table *B* gives the graduated distribution at individual ages of 100,000 of male and female population as deduced by the mathematical formula above referred to. A graph showing the graduated mean-age curve for males accompanies.

214. Defective Registration of Births and Deaths—The next step in the construction of the mortality table would be to deduce rates of mortality at successive ages by comparing the mean numbers derived as above with the mean deaths at corresponding ages extracted from the vital statistics of the epoch 1901-1921. These numbers representing the mean deaths, should then be subjected to the following three preliminary processes before they could be compared with the graduated mean population figures for the deduction of the rates of mortality.

1. Adjustment for inaccuracies of age, in the same way as population statistics.
2. A correction in the ungraduated number representing the mean number of deaths in each quinary group, proportionate to the changes introduced by graduation into the number representing the population at the corresponding group.
3. The process of graduation giving the deaths at individual ages.

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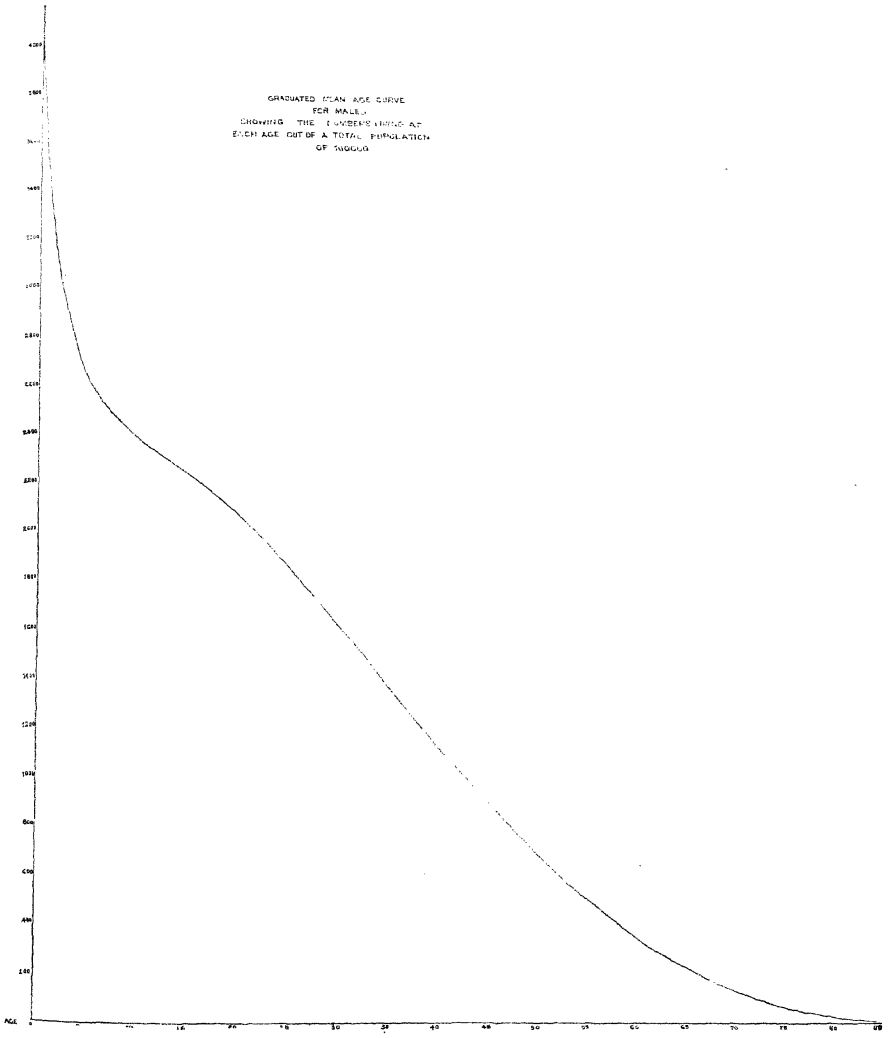

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I was debarred from using this method because the vital statistics of the Baroda State teems with inaccuracies. During the decennium 1911-1921 the vital statistics shows 580,390 births against 612,055 deaths indicating a reduction in the total population of 31,665, while a comparison of the Census Returns of 1921 with those of 1911 shows an increase of 93,724. The difference between these two numbers 125,389 is too big to represent the inflow of immigration during the decennium. The total balance of migration of immigrants during the decade is estimated only at about 23,908 in favour of this State. This goes to prove that the records of births and deaths are extremely inaccurate and untrustworthy even during the decennium 1911-1921, and naturally much more so during the earlier decade.

215. Rate of Increase—It has been said too often and quite appropriately that there should be a comparison of the living with the dying for the construction of a very accurate Mortality Table. The National Insurance Act Tables (1911) and the English Life Tables No. 7 and 8 were all constructed by comparing the living with the dying, and consequently may be said to reflect to a high degree of accuracy, the mortality of the epochs, with the experiences of which they were constructed. Almost all other civilised countries construct their mortality tables by using both census returns and death registers, which latter are maintained there at a very high level of accuracy. It cannot be urged too strongly here that if Baroda State wants to construct a very accurate Mortality Table, a table that can be used for such a serious purpose as the calculation of Life Insurance Premiums,—and give thereby a lead in that direction over the rest of India, it should take immediate steps for the accurate record of its vital occurrences. As observed before in another connection, the spread of mass education should go hand in hand with extreme vigilence on the part of the officers entrusted with the vital records, to attain the desired accuracy.

Under these circumstances, the only way open to me was to deduce the average rate of increase of the population during the 20 years (1901-1921) under consideration. This average or normal rate of increase which was assumed to be constant at all ages was utilised to give the populations at each age in two successive years, which occurred in the middle of the epoch under consideration. From these two sets of figures the rates of mortality were deduced, and all other functions of the table. During the 10 years 1901-1911 the male population showed an increase at the rate of 4·69 per mille per annum while the rate during the decennium 1911-1921 was 4·226. These two figures combined give an average rate of increase of 4·458 per mille per annum during the 20 years 1901-1921. The graduated mean numbers supplied at each age by the mathematical formula would represent approximately the age distribution of a total population of 100,000 during the middle of the epoch under consideration. Multiplying and dividing these numbers by $Y^r/_{20}$, where r is the constant (average) rate of increase as deduced above, I was able to obtain the two sets of numbers above referred to, representing the populations at each age in two successive years. By this process the probability of living one year ($p_{xx}\frac{1}{2}$) at each age was deduced and from these the corresponding values at integral ages (p_x) were obtained by interpolation.

216. Rates of Mortality in Infancy and Childhood—The above methods of obtaining the rates of mortality and other functions of the table were adopted from about age 19 to the end of life. The same investigations revealed that the data were extremely unreliable for the ages of infancy and childhood. Even in countries like England and Wales, where much reliance is placed on the accuracy of the statistical returns at all the higher ages, those relating to infancy and childhood especially up to age 5, are taken at a great discount. In India the irregularity and unreliability of the Census data extend to ages far beyond the age 5.

217. Proclaimed Clans Experience: Defects involved—For the deduction of the rates of mortality at these early ages the plan adopted by Sir George Hardy and followed later on by Mr. Ackland was to employ the data in respect of the proclaimed clans, in the United Provinces of Agra and Oudh. These are a particular class of people in that province among whom infanticide was rife, for which reason, they were proclaimed and brought under strict administrative control. As a result, an accurate record of births and deaths at the earlier ages could be kept for a number of years. The accurate record of vital occurrences up to age 12 among the proclaimed clans commenced in the year 1876 and ended, it appears, in the year 1904. But the data for the years 1891-1900 and 1901-1904

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are of a very unsatisfactory nature as to extent and the manner of grouping. Hence Sir George Hardy did not utilise the figures for 1891-1900 and similarly Mr. Ackland did not use either this experience or that of 1901-1904, but availed himself of the table constructed by Sir George Hardy for the ages of childhood upto 12 with the experience among the Proclaimed Clans during the years 1876-1901, with such suitable adjustments in the rates of mortality among the Proclaimed Clans as a smooth fitting with the rates deduced at the higher ages, suggested. A separate modification was made in the case of each Province for which a table was to be constructed. I had no other option but to use the same Proclaimed Clans' experience of Sir George Hardy for the construction of the table at the earlier ages. This is not entirely satisfactory for the following two reasons: (1) The experience relates to an epoch (1876-1891) which is separated from the present time by several decenniums and cannot be assumed to reflect the vitality of the children of the present generation. (2) The experience relates to a locality far away from Baroda State and to strata of society that are not representative of the people of this territory. Consequently the tables I have constructed can be assumed only to be a rough approximation to the truth at the early ages.

Proclaimed Clans Experience Modified—To deduce the rates of mortality during the early ages of the table, I made such changes in the rates of mortality among the proclaimed clans deduced by Sir George Hardy as was necessary to give a continuous curve from the beginning to the end of life and join smoothly on to the curve representing the rates of mortality at the ages from 19 onwards which had been deduced by the mathematical formula.

218. Supervision of Vital Statistics in Representative Localities recommended—I beg leave at this stage to bring to the notice of the Baroda Government the extreme desirability and importance of taking steps towards a very careful and accurate record of births and deaths up to age 15 in some representative locality. In another connection I have touched upon the importance of an accurate maintenance of the vital statistics as a whole. As the public should cooperate with the authorities to realise this end, it is too much to expect the whole population of Baroda State to respond to this call at once. Further the record of vital occurrences at the earlier ages is susceptible of irregularities peculiar to itself, which even the present stage of development of English society is not able completely to surmount. I would recommend the City of Baroda to be the representative locality above referred to, where an accurate record of births and deaths upto age 15 should be maintained. It is easier to have such a record maintained in an urban than in a rural area. Further fairly accurate returns as to age can be expected from the people in a city where the level of education is higher than in the rest of the country. Lastly the City of Baroda having a population of nearly 100,000 is fairly representative. Such a record has many advantages of which the following two deserve special mention. As a mortality table for the Baroda State is to be incorporated in the Census Report of 1921, it might be assumed that a standard has been set for future census reports and that the Baroda Government would cause such tables to be published along with their reports at subsequent censuses. If that be the case, the table constructed will be embodying the experience of the State from the beginning to the end of life, and further the portion of the table pertaining to the ages of childhood will be that of the epoch under consideration and not one belonging to an antiquated period dovetailed on to a later experience at the advanced ages. Secondly the death rate among infants and children is the barometer by which the improvement or deterioration in the sanitary conditions of the locality can be appraised. If accurate statistical figures be collected for births and deaths during childhood, these figures would demonstrate with more force than words, the influence of locality surroundings and changed sanitary conditions on the duration of human life.

219. Preparation of Life-table for Females—I have, so far, explained the graduation and the construction of the mortality table for the male population of the Baroda State. An examination of the census return relating to females revealed the same irregularities and inaccuracies noticed in the males return to a very highly magnified extent. Consequently I thought it unnecessary to subject the crude age returns for females to the same independent investigation as was made in the case of the male return. There was no certainty of securing any additional accuracy thereby. The method adopted has been to use the graduated mean male

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numbers living at each age out of a total of 100,000 of male population as a base line, and pass on straight to the graduated female numbers living at each age out of a total of 100,000 of female population. The passage from the graduated male numbers to the graduated female numbers at individual ages entailed the calculation of the number of females to 10,000 males living at each age. For this purpose I have compared the mean male and female population collected in suitable groups (not necessary quinquennial) to minimise as much as possible irregularities, thus deducing the number of females living corresponding to 10,000 males in each group. The epoch under consideration gave an average of 9,161 female births to 10,000 male births. I then drew a smooth curve as suggested by the above ratios at birth and at successive age groups. The ordinates of this curve gave the number of females to 10,000 males living at each age. These numbers applied to the graduated mean male population gave the graduated mean female numbers at each age as stated above. This method of procedure claims an amount of accuracy that would have been unattainable, if the direct method of procedure as for males had, been adopted. As a matter of fact, in cases of very defective and irregular data, construction of Life Tables using another well graduated table as a base line has been very often advocated by Actuaries.

220. Columns of Mortality Tables Explained—In the mortality Tables appended (Tables C and D) several columns are found. Column 2 shows the number living at age x. These are the numbers that enter upon their xth birthday out of 100,000 children born. Column 3 gives the numbers dying between ages x and x+1. Column 4 shows mortality per cent. at age x. In column 5, we see the numbers living between ages x and x+1. In a community supported by 100,000 births, these would be the numbers recorded at age x last birthday were a census taken in the middle of any year. Column 6 shows the numbers living above age x. This is the population, aged x and above, that 100,000 births would support. These numbers are obtained by adding the numbers in Col. 5 from the bottom upwards. The numbers in column (5) are obtained at the early ages up to 13 by integration. Beyond age 13, the number in column 5 against age x is the arithmetic mean between the numbers living at ages x and x + 1.

221. Comparative Expectations of life at Decennial Ages—I have prepared below a comparative tabular statement of the expectation of life at decennial ages for the Bombay Presidency, as deduced from the results of 1901 and 1911 Censuses and for the Baroda State as deduced from my investigations, with the values for England prepared from the Censuses of 1901 and 1911 (English Life Tables Nos. 6 and 7).

MALES

Age	Bombay Presidency		Baroda State	England and Wales	
	1901	1911	1921	1901	1911
0	22·77	22·52	22·44	44·07	48·53
10	34·62	33·33	32·97	49·65	51·81
20	28·39	26·43	25·86	41·04	43·01
30	22·27	21·32	20·42	33·06	34·76
40	16·90	17·23	16·17	25·65	26·96
50	12·48	13·51	12·51	18·89	19·76
60	8·73	9·94	9·22	12·90	13·49
70	5·38	6·55	6·08	8·02	8·39
80	2·81	3·48	3·24	4·40	4·86
90	1·07	1·41	1·00	2·32	2·56

FEMALES

Age	Bombay Presidency		Baroda State	England and Wales	
	1901	1911	1921	1901	1911
0	24·05	22·86	22·91	47·70	52·38
10	33·69	33·50	33·33	51·98	54·53
20	28·52	26·54	25·99	43·45	45·77
30	22·98	21·57	20·63	35·43	37·36
40	17·78	17·60	16·66	27·81	29·37
50	13·37	13·81	12·96	20·63	21·81
60	9·30	10·13	9·45	14·08	15·01
70	5·58	6·62	6·23	8·74	9·25
80	2·92	3·49	3·31	4·84	5·36
90	1·20	1·42	1·25	2·68	2·94

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222. Conclusions Deduced therefrom—The inference to be gathered from the above statement is that the expectation of life as deduced now is somewhat lower than that of the Bombay Presidency for 1901 and 1911. Its being lower than 1911 is obvious. But 1901 mortality table was prepared by combining the returns of 1881, 1891 and 1901 giving double weight to the 1891 return. The decade 1881-1891 was free from famines and pestilences to such an extent that all the Indian Provinces showed very large increases at the census of 1891. Consequently the combination of 1891 census return with the returns of 1881 and 1901 served to obliterate to a very great extent the effects of the great famine of 1899-1900. In the average mortality table that I have constructed I have used the 1911 return as a comparatively healthy one. This return as observed at the opening of this memorandum is not such a prosperous and happy record as to eliminate completely the effects of influenza and plague of the last decade, though their effects have been minimised as much as possible. After age 50, the expectation of life for 1921 (Baroda State) takes a middling course between those of 1901 and 1911, being greater than that of 1901 and less than that of 1911. This is perhaps due to the epidemic of influenza having specially victimised the youthful and adult ages when it was very virulent, as has been made out by the investigations of the Registrar General of Births and Deaths, England and Wales. The figures of England are given not only to compare the value of a life in India with that of a life in England at the same age, but also to bring home to the mind of the Indian what potent factors good climate, sanitation, and method of living are in prolonging the duration of life. But a comparison may be instituted between the progression of the rates of mortality in England and their progression in India at successive epochs. English Life Table No. 6 shows the rates of mortality that prevailed during the 10 years 1891 to 1900, No. 7 during the 10 years 1901-1910 and No. 8 during the three years 1910-1912. A comparison of the rates of mortality of these three tables shows that Life Table No. 7 indicates lighter mortality both for males and females than does Life Table No. 6. Again Life Table No. 8 which is of the most recent date, shows a decided improvement on No. 7. Thus, it is claimed, there are annually 41,355 males and 48,562 females saved in the population of England and Wales between the ages of 5 and 89 by the fall in the rate of mortality which took place in the period 1891 to 1900 and the period 1910 to 1912.

It is rather unfortunate that in India we are not able to show such an improvement in the rates of mortality as time advances. A comparison of the rates of mortality for males according to my table with those of Hardy and Ackland shows (omitting ages upto 20 as not being completely trustworthy with all the three) that the rate of mortality as indicated by my table takes a middling course between those of Hardy and Ackland from age 20 to age 31, Hardy's table showing a superior (lesser) rate between these ages. Between ages 31 and 61, the rates of mortality shown by my table are greater than those of both Hardy and Ackland. But Ackland's table which at age 20 shows a rate of mortality heavier than that of Hardy, beats (gets less than) Hardy's rate at age 49 and continues to show a superior rate up to the extremity of life. The rates according to my table get between those of Ackland and Hardy at age 61 and continue to occupy a middling position almost to the end of life. It cannot therefore be claimed for India and for Baroda State along with it, that the rates of mortality have been improving with the march of time, in the same unqualified way as has been claimed for England. One of the several objects in constructing a mortality table will be met, if the causes that bring about excessive mortality are properly traced and remedial measures taken for the improvement of the death rate among the population.

It might here be observed in passing that there is a great sociological interest in the construction of a mortality table. Tables can be constructed from the experiences of people following a certain occupation to investigate how far that particular occupation is conducive to the prolongation or rapid deterioration of human life. Similarly the experience of the people inhabiting a particular locality may be made the basis of an investigation with a view to find out the salubrity of that locality. Again a table may be constructed from the statistics collected among widows only. A comparison of the rates of mortality and expectations of life as shown by that table with those from a table relating to married women will throw much light on one of the most vexed questions in India—widow remarriage. Such a comparison will reveal how far forced widowhood (apart from the loss in

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man power it entails for the nation) and their unhappy state of mind affect their longevity.

223. **Reason for adhering to Hardy's Method**—My methods have not departed from those of Sir George Hardy, except for graduation where I have as observed before adopted the modern statistical method of graduation by frequency curves. The reasons for adopting the same methods as Hardy have been given by Mr. Ackland. Mr. Ackland says :—

"Having regard to Mr. Hardy's wide and exceptional experience in matters relating to Indian Mortality, and to his unrivalled ability in all questions involving the adjustment and graduation of life tables, it is not perhaps surprising that I have not seen my way to improve upon these methods, or rather to vary them in directions which might or might not be in the nature of improvements. The nature of the investigation was also such that, having regard to the available data, and especially to the known defects in the Registration statistics, little or no choice was left as to the fundamental methods to be followed throughout the investigation. It seemed also most desirable that the methods adopted on the present occasion should not, except where absolutely necessary, depart materially from those adopted by Mr. Hardy, in order that the tabular results might conveniently be compared."

224. **Conclusion**—In conclusion I wish to add that when I agreed to do this work, I had no idea of the magnitude of the task before me. As one who was just then preparing for the degree of "Associate Institute of Actuaries" I thought that the methods would closely follow those, that one met with while preparing for the above degree. That is to say, these methods presumed that the data are correct without those irregularities inherent to all population returns. When I found that I should have to proceed by a quite different method which I had then only imperfectly studied, I found the encouragement and courtesy shown to me by Mr. S. V. Mukerjea, B.A. (Oxon), Census Superintendent for Baroda State of no small value. Sir George Hardy's memo. and Mr. Ackland's Report were then the only materials available. Since then I have had access to a mass of valuable knowledge which had before been a closed door to me. At that time it is pleasant to feel, how illuminating and suggestive I found my discussions with Mr. S. V. Mukerjea. When I offer my thanks to him, I do so with the full knowledge that they give but a poor and inadequate expression to the feelings of gratitude that prompt them. I shall always cherish the happiest memory of my association with him in the Census Office. I also feel grateful to the Government of His Highness the Maharaja Gaekwad for having given me the opportunity to do this important work.

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TABLE A

SHOWING AGE DISTRIBUTION OF 100,000 PERSONS OF EACH SEX FOR THE CENSUSES 1901-1921 IN THE BARODA STATE

Ages	Males					Females				
	1901	1911	1921	Mean 1901–1921	Graduated mean numbers	1901	1911	1921	Mean 1901-1921	Graduated mean numbers
1	2	3	4	5	6	7	8	9	10	11
0–4	9,473	15,206	14,131	13,504	15,615	10,059	16,298	15,139	14,449	15,490
5–9	12,538	11,736	13,430	12,360	12,493	12,297	10,667	12,733	11,591	12,408
10–14	12,694	9,556	12,036	10,961	11,536	11,648	8,553	11,497	10,063	11,478
15–19	11,294	10,306	9,199	10,276	10,768	10,458	10,149	8,822	9,894	10,742
20–24	10,137	10,315	8,092	9,715	9,836	9,909	10,697	8,389	9,923	9,829
25–29	9,612	9,674	8,678	9,409	8,703	9,439	10,124	8,850	9,634	8,696
30–34	8,482	8,163	7,984	8,198	7,481	8,210	8,172	7,882	8,109	7,442
35–39	7,168	7,125	6,829	7,062	6,248	7,142	7,025	6,969	7,040	6,194
40–44	5,785	5 665	5,586	5,675	5,066	6,031	5,593	5,701	5,729	5,032
45–49	4,566	4,324	4,618	4,458	3,970	4,918	4,089	4,519	4,404	3,981
50–54	3,369	3,278	3,728	3,413	2,990	3,717	3,312	3,454	3,449	3,052
55–59	2,160	1,983	2,370	2,124	2,147	2,522	2,183	2,335	2,306	2,235
60 & over ..	2,722	2,669	3,319	2,845	3,147	3,650	3,138	3,710	3,409	3,421

TABLE B

GRADUATED NUMBERS LIVING BETWEEN AGES X AND (X+1) OUT OF 100,000 OF EACH SEX IN THE BARODA STATE

Age X	Baroda State		Age X	Baroda State	
	Male	Female		Male	Female
0	3,786	3,753	45	878	877
1	3,281	3,254	46	835	835
2	3,012	2,988	47	793	795
3	2,831	2,810	48	752	756
4	2,705	2,685	49	712	718
5	2,613	2,594	50	672	681
6	2,544	2,526	51	634	645
7	2,489	2,472	52	597	610
8	2,443	2,427	53	561	575
9	2,404	2,389	54	526	541
10	2,369	2,355	55	492	509
11	2,337	2,324	56	460	477
12	2,306	2,295	57	428	446
13	2,277	2,266	58	398	416
14	2,247	2,238	59	369	387
15	2,217	2,210	60	341	360
16	2,187	2,180	61	314	333
17	2,155	2,150	62	289	307
18	2,122	2,118	63	264	282
19	2,087	2,084	64	241	259
20	2,050	2,047	65	219	236
21	2,010	2,009	66	198	215
22	1,969	1,968	67	179	195
23	1,926	1,925	68	160	175
24	1,881	1,880	69	143	157
25	1,836	1,835	70	127	140
26	1,789	1,789	71	112	124
27	1,741	1,740	72	98	109
28	1,693	1,691	73	85	95
29	1,644	1,641	74	73	82
30	1,595	1,591	75	62	71
31	1,546	1,540	76	53	60
32	1,496	1,488	77	44	50
33	1,447	1,437	78	36	42
34	1,397	1,386	79	29	34
35	1,347	1,336	80	23	27
36	1,298	1,287	81	18	21
37	1,249	1,238	82	14	16
38	1,201	1,190	83	10	12
39	1,153	1,143	84	7	8
40	1,105	1,096	85	4	5
41	1,059	1,050	86	3	3
42	1,012	1,005	87	1	2
43	967	962	88	..	1
44	923	919			

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TABLE C

Life Table, Baroda State

Males

Age	Living at age X	Dying between ages X and X+1	Mortality per cent.	Living between ages X and X+1	Living above age X	Mean after life-time at age X
1	2	3	4	5	6	7
0 ..	100,000	29,662	29·662	76,795	2,243,874	22·43874
1 ..	70,338	6,470	9·198	66,850	2,167,079	29·106
2 ..	63,868	4,180	6·480	61,638	2,100,229	32·884
3 ..	59,688	2,820	4·724	58,191	2,038,591	34·154
4 ..	56,868	1,958	3·443	55,833	1,980,400	34·824
5 ..	54,910	1,402	2·553	54,173	1,924,567	35·049
6 ..	53,508	1,042	1·947	52,964	1,870,394	34·955
7 ..	52,466	808	1·540	52,047	1,817,430	34·640
8 ..	51,658	656	1·270	51,320	1,765,383	34·174
9 ..	51,002	558	1·094	50,717	1,714,063	33·606
10 ..	50,444	493	·977	50,194	1,663,346	32·974
11 ..	49,951	448	·897	49,724	1,613,152	32·295
12 ..	49,503	423	·854	49,292	1,563,428	31·583
13 ..	49,080	417	·850	48,871	1,514,136	30·851
14 ..	48,663	428	·880	48,449	1,465,265	30·111
15 ..	48,235	444	·920	48,013	1,416,816	29·3733
16 ..	47,791	464	·970	47,559	1,368,803	28·6420
17 ..	47,327	492	1·040	47,081	1,321,244	27·9173
18 ..	46,835	538	1·150	46,566	1,274,163	27·2053
19 ..	46,297	602	1·300	45,996	1,227,597	26·5157
20 ..	45,695	655	1·434	45,368	1,181,601	25·8584
21 ..	45,040	705	1·568	44,688	1,136,233	25·2271
22 ..	44,335	754	1·697	43,958	1,091,545	24·6205
23 ..	43,581	793	1·820	43,185	1,047,587	24·0377
24 ..	42,788	830	1·940	42,373	1,004,402	23·4748
25 ..	41,958	863	2·057	41,527	962,029	22·9284
26 ..	41,095	893	2·172	40,649	920,502	22·3994
27 ..	40,202	920	2·287	39,742	879,853	21·8858
28 ..	39,282	942	2·398	38,811	840,111	21·3867
29 ..	38,340	962	2·508	37,859	801,300	20·8687
30 ..	37,378	979	2·618	36,889	763,441	20·4248
31 ..	36,399	994	2·731	35,902	726,552	19·9608
32 ..	35,405	1,006	2·841	34,902	690,650	19·5071
33 ..	34,399	1,015	2·951	33,892	655,748	19·0630
34 ..	33,384	1,026	3·074	32,871	621,856	18·6274
35 ..	32,358	1,027	3·175	31,845	588,985	18·2021
36 ..	31,331	1,028	3·277	30,817	557,140	17·7824
37 ..	30,303	1,029	3·398	29,789	526,323	17·3687
38 ..	29,274	1,031	3·521	28,759	496,534	16·9616
39	28,243	1,030	3·646	27,728	467,775	16·5625
40 ..	27,213	1,026	3·763	26,701	440,047	16·1705
41 ..	26,189	1,018	3·887	25,680	413,346	15·8196
42 ..	25,171	1,010	4·024	24,666	387,666	15·4014
43 ..	24,161	1,002	4·145	23,660	363,000	15·0242
44 ..	23,159	991	4·278	22,664	339,340	14·6526
45 ..	22,168	979	4·418	21,679	316,676	14·285
46 ..	21,189	966	4·561	20,706	294,997	13·923
47 ..	20,223	952	4·708	19,747	274,291	13·563
48 ..	19,271	937	4·859	18,803	254,544	13·208
49 ..	18,334	920	5·019	17,874	235,741	12·858
50 ..	17,414	903	5·186	16,963	217,867	12·511
51 ..	16,511	884	5·355	16,069	200,904	12·167
52 ..	15,627	865	5·533	15,195	184,835	11·827
53 ..	14,762	844	5·719	14,340	169,640	11·491
54 ..	13,918	823	5·913	13,507	155,300	11·166
55 ..	13,095	801	6·119	12,695	141,793	10·827
56 ..	12,294	779	6·332	11,905	129,098	10·501
57 ..	11,515	755	6·556	11,138	117,193	10·177
58 ..	10,760	731	6·794	10,395	106,055	9·856
59 ..	10,029	706	7·044	9,676	95,660	9·538
60 ..	9,323	681	7·308	8,983	85,984	9·223
61 ..	8,642	656	7·589	8,314	77,001	8·910
62 ..	7,986	630	7·885	7,971	68,687	8·601
63 ..	7,356	604	8·205	7,354	60,716	8·254
64 ..	6,752	577	8·547	6,464	53,362	7·903

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TABLE C.—Life Table, Baroda State—Males

Age	Living at age X	Dying between ages X and X+1	Mortality per cent	Living between ages X and X+1	Living above age X	Mean after life-time. at age X
1	2	3	4	5	6	7
65 ..	6,175	550	8·908	5,900	46,898	7·595
66 ..	5,625	523	9·298	5,364	40,998	7·289
67 ..	5,102	496	9·716	4,854	35,634	6·984
68 ..	4,606	468	10·168	4,372	30780	6·683
69 ..	4,138	441	10·661	3,918	26,408	6·382
70 ..	3,697	414	11·197	3,490	22,490	6·084
71 ..	3,283	386	11·772	3,090	19,000	5·788
72 ..	2,897	360	12·421	2,717	15,910	5·492
73 ..	2,537	333	13·135	2,371	13,193	5·200
74 ..	2,204	307	13·910	2,051	10,822	4·910
75 ..	1,897	280	14·783	1,757	8,771	4·624
76 ..	1,617	255	15·762	1,490	7,014	4·338
77 ..	1,362	230	16·870	1,247	5,524	4·056
78 ..	1,132	205	18·131	1,030	4,277	3·778
79 ..	927	182	19·581	836	3,247	3·503
80 ..	745	158	21·256	666	2,411	3·236
81 ..	587	136	23·192	519	1,745	2·973
82 ..	451	115	25·425	394	1,226	2·718
83 ..	336	94	27·991	289	832	2·477
84 ..	242	75	31·926	205	543	2·244
85 ..	167	57	34·266	139	338	2·024
86 ..	110	42	38·647	89	199	1·809
87 ..	68	29	43·305	54	110	1·617
88 ..	39	18	48·076	30	56	1·436
89 ..	21	11	53·396	16	26	1·238
90 ..	10	6	58·301	7	10	·1
91 ..	4	3	63·827	3	3	·75
92 ..	1	1	73·010	.....	.....	.....

TABLE D

Life Table, Baroda State
Females

Age	Living at age X	Dying between ages X and X+1	Mortality per cent.	Living between ages X and X+1	Living above age X	Mean after life-time at age X
1	2	3	4	5	6	7
0 ..	100,000	29,587	29·59	78,832	2,296,561	22·9056
1 ..	70,413	6,395	9·08	66,962	2,213,729	31·4392
2 ..	64,018	4,105	6·41	61,825	2,146,767	33·5331
3 ..	59,913	2,745	4·58	58,453	2,084,942	34·7994
4 ..	57,168	1,883	3·29	56,170	2,026,480	35·4480
5 ..	55,285	1,327	2·40	54,585	1,970,319	35·6393
6 ..	53,958	967	1·79	53,451	1,915,734	35·5041
7 ..	52,991	733	1·38	52,609	1,862,283	35·1433
8 ..	52,258	581	1·11	51,957	1,809,674	34·6296
9 ..	51,677	483	·935	51,429	1,757,717	34·0136
10 ..	51,194	418	·817	50,981	1,706,288	33·3291
11 ..	50,776	373	·735	50,586	1,655,307	32·6002
12 ..	50,403	363	·720	50,221	1,604,721	31·8378
13 ..	50,040	365	·73	49,857	1,554,500	31·0651
14 ..	49,675	388	·78	49,481	1,504,643	30·2922
15 ..	49,287	423	·86	49,075	1,455,162	29·5240
16 ..	48,864	465	·95	48,631	1,406,087	28·7759
17 ..	48,399	508	1·05	48,145	1,357,456	28·0471
18 ..	47,891	551	1·15	47,615	1,309,311	27·3393
19 ..	47,340	601	1·27	47,039	1,261,696	26·6517
20 ..	46,739	659	1·409	46,409	1,214,657	25·9881
21 ..	46,080	718	1·559	45,721	1,168,248	25·3524
22 ..	45,362	773	1·704	44,975	1,122,527	24·6892
23 ..	44,589	815	1·828	44,182	1,077,552	24·1664
24 ...	43,774	853	1·948	43,747	1,033,371	23·6070

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TABLE D—LIFE TABLE, BARODA STATE—FEMALES

AGE	Living at age X	Dying between ages X and X+1	Mortality per cent.	Living between ages X and X+1	Living above age X	Mean after life-time at age X
1	2	3	4	5	6	7
25 ..	42,921	886	2·064	42,478	989,624	23·0567
26 ..	42,035	931	2·216	41,569	947,146	22·5321
27 ..	41,104	967	2·352	40,620	905,577	22·0314
28 ..	40,137	991	2·469	39,641	864,957	21·5500
29 ..	39,146	1,024	2·640	38,635	825,316	21·3384
30 ..	38,125	1,042	2·731	37,604	786,681	20·6345
31 ..	37,083	1,064	2·868	36,551	749,077	20·1998
32 ..	36,019	1,075	2·988	35,481	712,526	19·7814
33 ..	34,944	1,076	3·078	34,406	677,045	19·3754
34 ..	33,868	1,079	3·186	33,328	642,639	18·9748
35 ..	32,789	1,070	3·265	32,254	609,311	18·5827
36 ..	31,719	1,057	3·332	31,190	577,057	18·1931
37 ..	30,662	1,046	3·410	30,139	545,867	17·8020
38 ..	29,616	1,043	3·523	29,094	515,728	17·4137
39 ..	28,573	1,043	3·648	28,051	486,634	17·0313
40 ..	27,530	1,030	3·744	27,015	458,583	16·6573
41 ..	26,500	1,014	3·826	25,993	431,568	16·2860
42 ..	25,486	994	3·902	24,989	405,575	15·9138
43 ..	24,492	982	4·008	24,001	380,586	15·5397
44 ..	23,510	972	4·132	23,024	356,585	15·1677
45 ..	22,538	957	4·245	22,059	333,561	14·7998
46 ..	21,581	935	4·333	21,113	311,502	14·4339
47 ..	20,646	915	4·431	20,188	290,389	14·0650
48 ..	19,731	902	4·573	19,280	270,201	13·6940
49 ..	18,829	887	4·709	18,385	250,921	13·3263
50 ..	17,942	870	4·853	17,507	232,536	12·9602
51 ..	17,072	854	4·999	16,645	215,029	12·5956
52 ..	16,218	837	5·164	15,799	198,384	12·2322
53 ..	15,381	826	5·367	14,968	182,585	11·8711
54 ..	14,555	808	5·554	14,151	167,617	11·5160
55 ..	13,747	791	5·752	13,351	153,466	11·1638
56 ..	12,956	773	5·967	12,569	140,115	10·8146
57 ..	12,183	754	6·189	11,806	127,546	10·4692
58 ..	11,429	735	6·435	11,061	115,740	10·1270
59 ..	10,694	713	6·659	10,337	104,679	9·78909
60 ..	9,981	691	6·926	9,635	94,342	9·45177
61 ..	9,290	671	7·219	8,954	84,707	9·11798
62 ..	8,619	644	7·480	8,297	75,753	8·78861
63 ..	7,975	621	7·781	7,664	67,456	8·45876
64 ..	7,354	598	8·140	7,055	59,792	8·13036
65 ..	6,756	574	8·486	6,469	52,737	7·80649
66 ..	6,182	548	8·867	5,908	46,268	7·48403
67 ..	5,634	526	9·334	5,371	40,360	7·16361
68 ..	5,108	500	9·789	4,858	34,989	6·84963
69 ..	4,608	472	10·243	4,372	30,131	6·53870
70 ..	4,136	446	10·783	3,913	25,759	6·22590
71 ..	3,690	419	11·363	3,480	21,846	5·92016
72 ..	3,271	393	11·996	3,074	18,366	5·61514
73 ..	2,878	366	12·724	2,695	15,292	5·31258
74 ..	2,512	339	13·485	2,342	12,597	5·01435
75 ..	2,173	311	14·340	2,017	10,255	4·71836
76 ..	1,862	286	15·342	1,719	8,238	4·42484
77 ..	1,576	259	16·466	1,446	6,519	4·13608
78 ..	1,317	234	17·746	1,200	5,073	3·85308
79 ..	1,083	208	19·204	979	3,873	3·57630
80 ..	875	183	20·862	783	2,894	3·30748
81 ..	692	157	22·742	613	2,111	3·04861
82 ..	535	133	24·866	468	1,498	2·80015
83 ..	402	110	27·256	347	1,030	2·56254
84 ..	292	87	29·934	248	683	2·33592
85 ..	205	68	32·922	171	435	2·12333
86 ..	137	49	36·242	112	264	1·92083
87 ..	88	35	39·916	70	152	1·73458
88 ..	53	23	43·966	41	82	1·55741
89 ..	30	15	48·414	22	41	1·38970
90 ..	15	8	53·282	11	19	1·24842
91 ..	7	4	58·592	5	8	1·12516
92 ..	3	2	64·366	2	3	1·02131
93 ..	1	.....	.....	1	1	1

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CHAPTER VI

SEX

PART I

General Observations

STATISTICAL DATA

Subject	TABLES		
	Imperial	State	Subsidiary
Sex by Administrative Divisions	VII	....	....
,, ,, Talukas	....	VI	....
,, ,, selected Towns	....	VII	..
General Proportions of the sexes by Natural Divisions (Four Censuses)	....	....	I
Number of Females per 1,000 Males by Age and religion (Three Censuses)	....	....	II
Number of Females per 1,000 Males by Age and Locality	....	....	III
Number of Females per 1,000 Males by caste	....	....	IV
Actual number of births and deaths by sex (Three decades)	....	....	V
Number of deaths by sex and age (selected years)	....	....	VI

225. Reference to Statistics—Imperial Table I gives the sex distribution of the population by administrative divisions. In the State Table I printed at the end of the volume of Imperial Tables, similar figures are given for talukas. In Imperial Tables IV and V, the sex distribution of the urban population is shown. Imperial Table VII (and its corresponding State Table VI) give statistics regarding the age-distribution of the population by sex. Similar figures for selected towns are shown in State Table VII. Subsidiary Tables I-IV are prepared from Imperial Table VII. Subsidiary Tables V and VI are compiled from figures supplied by the Sanitary Department.

226. Scope of the Chapter—At the last census, a great deal of space of the Chapter on Sex in the different reports was given to the consideration of the imputation by certain foreign critics of the Indian Census, notably von Mayr, on the accuracy of the sex return. These critics took the sex ratio of Western Europe (where there is an excess of females over males) as the standard and accounted for the contrary phenomenon in India by the reason that special social circumstances, such as Purdah, operating here, resulted in so many cases of wilful concealment of females from the census schedule as to turn the scale, from an excess in reality, to a defect of females in the returns. These arguments were carefully examined at the last census and shown to be unsound. It was shown that the Western Europe ratios should not be necessarily taken as the standard to which Indian sex proportions should conform. Further the elements of race and social customs operated towards a greater masculinity at birth than in Europe and this initial advantage was enhanced in this country in the later ages by the greater neglect of female life and the greater liability to death, owing to the universality of marriage and the perils of child-bearing, of women during their adolescent and adult periods of life. For these reasons it may be presumed that this particular bogie set up by these critics is now laid. This Chapter will therefore be only secondarily concerned with investigating the accuracy of the return. Part I will give a general exposition of the census figures. Part II will give the main results of the special enquiries made into the size and sex constitution of families and the question of comparative fertility.

227. Accuracy of the Return—The general reliability of the return will be considered a little more closely while the figures regarding sex ratios by age are taken up. Here it may be said briefly that the sex return at each census shows greater accuracy than before. In this census a much larger number of Musalman teachers of local experience were entertained on the census staff as enumerators and supervisors than on previous occasions. Besides, with each succeeding census, the people's suspicion regarding the object of the undertaking becomes less and

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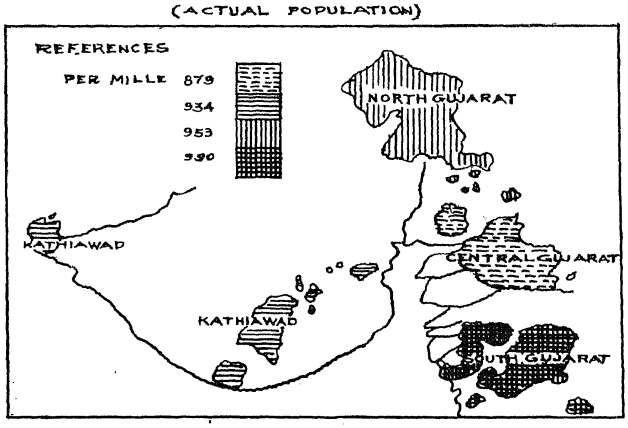
less. With the greater spread of education, there is much more of co-operation of all classes. The fears regarding the *omission* of females are therefore groundless. Whatever prejudice regarding the entry of unmarried girls of nubile ages may have resulted in the falsification of age and civil condition returns, there is little ground to suspect that any such females were actually omitted from the returns. Express instructions were however given to all the census staff to be especially careful that no such omissions occurred to vitiate the general accuracy of the returns. Special testing of the entries on this score was particularly enjoined on all Census Supervisors and other superior inspecting staff.

228. Sex Ratio in the State and Natural Divisions—Of the total population in the State, there are 932 females to 1,000 males, or in other words, per 1,000 females, there is a male excess of 73. The masculinity in India as a whole is less than this State, but it is higher in Bombay Presidency generally and the neighbouring districts of British Gujarat. In Madras, the females are actually in excess, while in the States of Mysore and Hyderabad, the situation tends more towards sex equality than in this State. In the margin are also given for the sake of comparison, the sex ratios of certain countries of Western Europe.

Name of Country	Number of females per 1,000 Males
India	*954*
Bengal	947
Bombay	920
British Gujarat ..	916
Madras	1,031
Hyderabad	968
Mysore	978
Baroda State ..	*932*
England & Wales (1911) ..	1,054
France	1,022
Germany	1,032

In the accompanying map, the variations in sex proportions are shown in the different parts of the State, as calculated on the actual population. Baroda *Prant* or Central Gujarat (exclusive of the City) shows the highest proportion of males with 886 females to a thousand males. With the City, the female proportion is further lowered to 879. South Gujarat with 990 females per 1,000 males shows the nearest approach to equality of proportions.



229. Influence of Locality on Sex Ratios—From the experience of four censuses, as shown in Subsidiary Table I, it appears that the order of natural divisions according to the proportion of females is the same. South Gujarat has always the highest proportion of females in the community, followed by North Gujarat, Kathiawad and Central Gujarat in the order stated here. These ratios are based however on actual population and do not take account of the disturbing factor of migration. Districts with a large contiguous migration (where females predominate) may have an inflated female ratio which does not correspond to the actual situation. For that

Number of Women per 1,000 Men		
Name of Division	Order according to female ratios calculated on	
	Actual Population	Natural Population
South Gujarat ..	1	1
North Gujarat ..	2	2
Kathiawad ..	3	4
Central Gujarat ..	4	3

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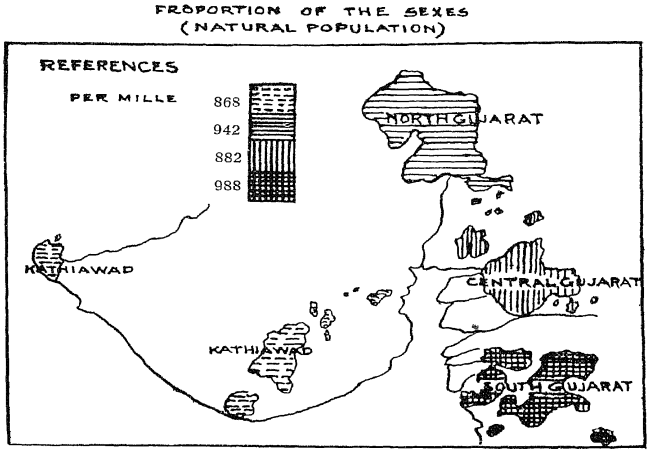
purpose it is necessary to get rid of this factor and calculate on the natural population of the divisions. It is only in this census that figures regarding the natural population of the different *prants* are available. Calculating the figures on this basis, we have, as in the margin, a slightly different order to that obtained from consideration of the actual population. Kathiawad from the point of view of natural population has the lowest female ratios.



From the consideration of these proportions it appears that locality has some influence in the determination of sex proportions. As Sir Alexander Baines pointed out in his India Report of 1891 :—

"A review of the whole field of statistics resulting from the Census inquiries seems to afford ground for the following deductions, which however are not put forward for the present as more than conjectural. The ratio of females to males taking the whole population in existence at one time, has a tendency to be higher along the coast or within the influence of sea-air, to an extent beyond what can be accounted for merely by the temporary absence of a certain number of males at sea. It runs higher, too, in hilly tracts, as a rule, than on the plains, and it seems to be depressed by a dry and hot climate, particularly if accompanied by a considerable range of temperature."

To investigate the truth of this statement, it is necessary to examine the varying figures of sex proportions in areas within the State which are on the sea coast or near the sea, in hilly and forested tracts, in dry rainless belts with sandy soil and in the rest of the plain country. The marginal statement gives the sex proportion of these different parts of the State. The sea coast areas include the Okhamandal *Prant* and the talukas of Kodinar, Navsari and Gandevi. The hilly and forested areas comprise the Rani tract and Mangrol, Dhari and Khambha Mahals. The dry belt comprises the whole of Kadi *Prant*, with the exception of the Trans-Sabarmati, and that portion of Amreli *Prant* not included in the above categories. The marginal ratios calculated as they are on the actual population have to be further smoothed by reference to disturbing factors such as migration and race. The dry belts have, as we have seen in the discussion on Movement of Population, gained through migration which being mainly with contiguous areas have brought over an excess of females. If the figures of natural population for this area were available, the sex ratio would have been doubtless lowered from 959. As we find from Subsidiary Table I, in Kathiawad, which is largely included in the dry belt, the sex ratio in natural population is only 868 as against 934 in the actual population. Similarly in North Gujarat, the figures for natural population are lower than for the actual. In the last class which includes all Baroda *Prant* and that part of the Rasti tract which is not near the sea, the main influence operative is not locality, but perhaps race or social environment. Apart from these disturbing circumstances, however, it seems true that propinquity to the sea and, to a less extent, the existence of hills and forests, tend to lessen the proportion of males in the absence of other neutralising factors.

Name of tract	Proportion of females to 1,000 males
Sea Coast areas	999
Hilly and forested tracts ..	931
Dry belts	959
All other areas except city ..	902

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230. Influence of Race on Sex Ratios—On the vexed question of sex much has been written but most writers seem to agree that race is an important factor on masculinity at birth and thence on the sex ratio of the population. The question of ethnic elements in Gujarat is another problem bristling with difficulties. The present composite Gujarati population is the result of the intermixture of various ethnical strains. But roughly there are three main elements observable. There is the Aryo-Indic or Aryo-Dravidian strain, which is comprised in the Brahmans and Vanias. The Scythic or Scytho-Dravidian element looms largely in the Rajput and Kanbi population and also amongst the Maratha immigrants from the Deccan. The Kolis* represent a little Rajput admixture with the aboriginal element and are intermediate between the Rajputs, and the Forest tribes who are predominantly aboriginal (perhaps Kolarian or Dravido-Kolarian) in descent. The rest of the Hindu population is a composite group into which all the elements have come. Musalmans again are divided into two sections—those with foreign strain and local converts who belong in respect of ethnic peculiarities to their Hindu congeners. In the margin, a statement is given which gives the sex ratios for the different ethnical elements. In studying these proportions the factor of migration must also be taken into account. The Scytho-Dravidian elements contain Marathas who are mostly semi-permanent, and therefore their sex ratio shows preponderance of males. Similar is the case with Musalmans with foreign strain. The local converts on the other hand suffer through emigration which differentiates mostly *against* males. All the elements show greater or less cross-breeding—the purest strain is probably amongst the Aryo-Indic castes at one end and the aboriginal tribes at the other. In both the sections the female ratio is high. Generally it may be stated that the theory that masculinity is raised by cross-breeding receives some support from these figures. This theory was set up by Messrs. Lewis, who based their conclusions on the birth returns for the decade 1884-1893 in Buenos Aires. Mr. S. de Jastrzebski with more extensive material at his command concludes that this theory is not proven. " For the present, therefore, the question must be relegated to the large number of those for which the restricted nature of material renders any definite conclusion unsafe. If I may hazard a personal opinion it is that the effect of cross-breeding on the masculinity of the offspring probably depends on the nature of the cross, and that it may be either positive, negative or neutral." At any rate the Baroda figures seem to indicate that the greater and more obvious is the cross, the higher is the masculinity.

Race Element.	Proportion of females to 1,000 males
Hindu Race elements :—	
i. Aryo-Indic	935
ii. Scytho-Dravidian	907
iii. Koli	905
iv. Aboriginal	955
v. Other mixed elements	954
Musalman	
i. With foreign strain	898
ii. Local converts	984

The question of the incidence of race is further complicated for Indian investigators by the fact that the birth-returns do not show race and that the analysis has to be dependent on census figures only. Conclusions regarding masculinity based on census returns are unsafe, for the population returned at a census is the resultant of many factors besides birth, such as the circumstances of environment and physical conditions that have influenced survival. It is interesting to see however that the factor of race combines with locality to raise the female proportion in South Gujarat, while in Central Gujarat, the population of which consists largely of Scytho-Dravidians and Musalmans with foreign strain, race and the social complex have neutralised whatever effect locality and climate might have had towards raising the proportion of females. Again the sex proportions of the Dravidian or aboriginal element give food for speculation. As we shall learn later the size of the aboriginal family is relatively larger than that of the general population ; and it is also interesting that generally speaking, the larger the size of family, the higher is the proportion of females. This circumstance together with the well-known fact that a high degree of prolificness is always attended with a low ratio of survival may necessitate, as Mr. Marten pointed out in the Central Provinces Report of 1911, either the development of

* The Kolis appear to be unclassifiable. They are a cross-breed certainly but they are so distinct from other classes, that they should be placed in a class apart.

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an enhanced sexual instinct or a high proportion of women or both factors co-existing. "Such characteristic might evolve as part of the development of a kindred people and become finally associated with race."

231. Proportion of the Sexes in different Religions—The above discussion regarding race may raise the question whether the sex ratios in the different religions and castes throw any light on the problem. It might be at once stated however that figures by religion are no guide. The sex ratios of Hindu and Animist sections of the aborigines for instance are almost identical—953 and 955 respectively, showing that religion has had no direct influence. Amongst Hindus and Musalmans, the range as indicated in the preceding paragraph is so large that any theorising on the score of religion is out of the question. Subsidiary Table II gives the sex ratios by age and religion. Subsidiary Table III gives similar figures for the different divisions. The only point of interest is to compare the sex ratios for religions in this state with general India ratios. The comparison with Indian figures enables us in the absence of figures for natural population by religions, to see in some measure how far the sex ratios in this State are influenced by the factor of migration. The Musalmans of the State contribute a considerable portion of our male emigrants, and thus the female ratio for that religion is rather higher in the State than in India as a whole. Jains and Parsis of the State send out a large proportion of their able-bodied youth (mainly males) to seek their fortunes in trade and other enterprise. The Kadi *Prant* Jains are particular sufferers in this respect and among them, females are in excess of males. The Navsari Parsis show also indication of migration seriously differentiating against males, among them the proportion of women to 1,000 men being as high as 1,387. The Christians have a high male ratio here than in India generally, due doubtless to the large immigrant Christian population (which is predominantly male) in the City. The Hindu Aryas show a very low proportion of females both here and in India. The Baroda Arya Samajists are largely immigrants of the semi-permanent type. But generally it happens that conversion to Aryaism takes place in adult age amongst orthodox families, whose men folk follow the ways of reform, while the womenkind continue to tread the old traditional path. The Animists and Hindus show other influences than migration—possibly race. Amongst the former the Baroda State Animists show a larger proportion of the Aryo-Indic admixture—which differentiates against females than in India as a whole. The Hindus of the State contain a large Scythic element which favours masculinity.

Religion	Proportion of females per 1,000 males in	
	Baroda	India
Hindu	927	959
Musalman ..	945	909
Animist ..	955	996
Jain	984	931
Christian ..	861	935
Parsi	1,323	944
Hindu Arya ..	690	799

Subsidiary Table II gives comparative ratios per religion for the last three censuses. The Hindu proportions seem stationary showing that the selective influence of epidemics and famine has been more or less neutralised by the effect of migration. The Musalman figures tell more or less the same tale. The Jains show almost progressive increase of the female proportion indicating continued and increasing drain through migration on the male population. The Animists who have been least affected by migration show progressive increase in the proportion of their males. Possibly this circumstance has some obscure relation with race, social habits and nutrition. Their progressive Hinduisation has had no appreciable results directly, but the change in their mode of living that this involves may have led to the greater predominance of males amongst them. Their greater concentration in cramped village sites may have led to a higher death rate amongst their womenkind. This is suggested only as a tentative hypothesis, but the question deserves a closer study than this Report can afford to give.

Religion	Proportion of females to 1,000 males		
	1901	1911	1921
Hindu	929	919	927
Musalman ..	956	939	945
Animist ..	971	961	955
Jain	951	987	984

232. Proportion of the Sexes amongst Castes—The caste proportions of sexes are more valuable to the social student, in that they throw a more

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direct light on race and, combined with occupation, help in the study of the influence of environment. In the margin, the sex ratios of the different castes arranged according to the plan explained in the previous chapter (para. 194) are appended. The priests, bards and actors, traders, the higher artisans, personal servants, early tribes and unclean castes have a higher proportion of females than the general population. Whilst amongst the others, the writers consisting largely of Prabhus, an immigrant community, show a preponderance of males; the military and dominant groups (Rajputs, Waghers, Marathas and others) appear also to differentiate against females; and amongst the agriculturists, the women are in serious defect. Wherever occupations or social influences impose seclusion upon women, there the female ratio is low. The margin collects figures for some of these castes. It is possible that amongst these castes, there may be a tendency to conceal information about females. But it is hardly likely that this tendency should have taken the form of totally excluding their record in the schedule. On the other hand that there is a deficiency of females amongst these communities is notorious. One of the commonest complaints with Rajput and Lewa Patidar families is the lack of eligible brides for their boys. Comparison with the proportions for 1911 shows on the whole a rise in the proportion of women. The fall amongst the Wagher women must be due to the influenza epidemic which played such havoc with female lives. Another factor amongst these groups where seclusion of women operates is their decided tendency to neglect female life. In the unclean castes and the tribes of aboriginal descent, the female proportion rises; in the latter race probably accounts for the phenomenon by initially advantaging the female at birth. With the former, it is possibly under-nourishment which differentiates against males in the long run. Amongst the labouring class, the women share in the hard work of their men-folk and this has a deleterious effect on their lives. Very few women in these strata are long-lived.

Caste Groups	Number of females to 1,000 males
State	*932*
Priests (Gujarati)	966
Militant groups	891
Writers	895
Bards and Actors	1,067
Traders	961
Agriculturists	912
Craftsmen and Artisans ..	973
Labouring class	905
Herdsmen	920
Personal servants	973
Early tribes	955
The Untouchables	1,003
Religious Mendicants ..	739

Purdah Castes	Number of females per 1,000 males	
	1921	1911
Pathan	824	881
Shaikh	926	907
Lewa Kanbi ..	857	833
Maratha	850	838
Rajput	906	859
Wagher	807	921

233. Variation in Sex Ratio in Natural Population—From these considerations as affecting sex proportions as disclosed in the actual population, we may turn again to natural population to see how the sex ratio has varied since 1891. It will be noticed that in that census, the proportions calculated on the two bases were nearly the same. In 1901, the natural population disclosed a much higher proportion of females than the censused population. Probably the reason for this was that the famine resulted in serious loss of population through death and migration. Famines select usually adversely to males, for they live a more adventurous life of toil and hardship and are more exposed to it than females who with their superior powers of physical endurance succumb less easily to starvation and economic distress. There was also the effect of emigration which in 1901, as we have already estimated *, resulted in a loss of 84,000 persons. This loss was mainly of able-bodied men who left their families and went abroad in search of labour. Both these causes combined to raise the female ratio from 929 to 970 in 1901. Since that year, famines having thinned away the ends of life, there was a high survival rate. The births increased bringing with it a preponderance of males. Epidemics like malaria in 1900, and plague in 1904 and onwards differentiated against females and the result was that in the cen-

Year	Proportion of females to 1,000 males in	
	Actual Population	Natural Population
1891	928	929
1901	936	970
1911	925	927
1921	932	922

* *Vide* para. 44 *supra*.

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sus of 1911, the female proportion again dwindled down to 927 in the natural population. In the actual population, the sex ratio was also about the same, because although immigrants increased particularly from contiguous areas, bringing an excess of females, emigrants to remoter countries began to swell in numbers and this meant a drain mainly on the male population. Practically therefore the sex ratio in the censused figures corresponded with the proportions calculated on the natural population. In 1921, the censused figures showed a higher ratio for females, although in the natural population the females figure less in proportion than what was the case ten years previously. The last decade, as we have seen, has brought to this State the largest balance in migration that has ever happened in the census era ; this gain has happened mostly in contiguous areas *e.g.*, Kathiawad, and the net result has been loss in men but gain in women, as contiguous migration usually contains a preponderance of females. Since 1911, while the general population has gained by 4·6 per cent, and the males have increased by 4·2 per cent, the females have added to their number by 5 per cent. Thus the females have increased in proportion to the population since 1911. Excluding the factor of migration however, and taking only the natural population into account we see the ratio dropping from 927 to 922. This is due exclusively to the selective influence of epidemics which are adverse to females.

234. Comparison with Vital Statistics—Eliminating the factor of migration we are enabled to consider in isolation the effect of the respective birth and death rates on the proportion of the sexes. It is well known that more male births happen than female all over the world. In this State, the experience of three decades of vital registration suggests that there are from 860 to 890 female births to 1,000 male every year. Taking the latest experience as being the most reliable, 890 female births to 1,000 male would mean a masculinity of 1,124. This may be compared to the experience of other provinces of India. The high masculinity at birth, if the birth returns are to be trusted, is most significant. The vital statistics for the Bombay Presidency for 1901-10 gave 1,080 as the rate of masculinity. In the marginal table, the North West Frontier Province and the Punjab are two other areas with high masculinity. The predominant historic strain in the ethnical composition of the Gujarat population is Gujar ; and this also appears in the Punjab and further West. The masculinity therefore of the three areas appears to correspond.

Masculinity at Birth*	
Province or State	Male births to 1,000 females
Baroda	*1,124*
Assam	1,070
Punjab	1,097
North West Frontier Province	1,236
Bihar and Orissa ..	1,040
Madras	1,045
United Provinces ..	1,082
Central Provinces ..	1,046

Apart from the question of race, the vital statistics show some correspondence with the results of the census. The marginal statement compares the proportion of females of the natural population in each census since 1891 with the proportion of births and deaths of the sexes in the vital statistics of the three decades. It will be seen that the proportionate birth and death rates of the different decades are generally what would be expected to produce the sex ratios in the natural population. In 1901, when the sex ratio showed an increased proportion for females, the vital figures disclosed female advantage, *i. e.*, a greater loss through natural causes amongst the males than amongst the females. In 1911, this advantage was lost by the females. The proportion of female deaths was far more than in the previous decade, which more than made up for the rise in the proportion of female births. In 1921, the rise in the proportion of female deaths was even higher, leading to a further depression of the female ratio in the natural population.

Year	Proportion of females per 1,000 males (Natural Population)	Female per 1,000 male	
		Births	Deaths
1891	929	....	....
1901	970	860 (1891-01)	798 (1891-01)
1911	927	881 (1901-11)	888 (1901-11)
1921	922	890 (1911-21)	904 (1911-21)

*Taken from Mr. S. de Jastrzebski's paper, *Sex Ratio at Birth*.

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235. Sex proportion in Vital occurrences in Urban and Rural Areas—In this connection it is useful to compare the sex proportion amongst births in urban and rural areas. In urban areas there are 912 female births to a thousand male; in the rural areas the corresponding proportion is 889. Thus there is greater masculinity at birth in rural areas. Messrs. J. N. and C. J. Lewis are quoted by Mr. Jastrzebski to have collected enough data to prove the thesis that urbanisation lowers masculinity. The sex proportion in urban and rural areas however give the reverse results—there being greater masculinity in towns as we have seen in para. 90. But this is of course due to the effect of immigration of males to towns for seasonal industries or for semi-permanent residence. To compare the Baroda figures with Mr. Jastrzebski's data, I append a marginal statement. In Western countries and in America, presumably the advance of civilisation has led to the spread of social and communal utilities to the remotest parts, and there the characteristic contrast between village and town that exists in India is not seen. The country districts, the population of which is often badly fed, show a greater excess of males at birth than towns, where conditions of life are easier.

Country	Period	Male births to 1,000 female	
		Urban	Rural
Baroda	*1910-20*	*1,097*	*1,125*
England & Wales	1911-15	1,038	1,043
United States of America ..	1915	1,054	1,058
South Africa (Whites) ..	1912-16	1,037	1,075
Cape Colony (Blacks) ..	1906-08	1,023	1,033
Ireland	1906-14	1,048	1,052

236. Proportion of the Sexes at different age-periods—We may now note the proportions of the sexes at various age periods. In the margin are given the death rates averaged from the decade's experience per selected age groups*. It will be seen therefrom that the initial advantage at birth is lost almost entirely soon before the year is out. In the period of childhood also girls are exposed to less risk than boys, but with later ages, and uptill the 40th year women have a heavier mortality than men. In the older ages, the males again are exposed to greater risk. In the middle period, the influence of migration generally selects adversely to females. The death rate for females is besides higher, owing to causes which have been often explained**—premature maternity, the effect of large families, the influence of diseases like malaria which attack the more stay-at-home sex, and also of special causes like Influenza and plague which attack females more than males, unlike famines which spare them more than men. If we examine the proportions given in the last column of the above table, we will see that the sex ratio conforms pretty nearly to what we should expect from the respective death rates. There is a significant drop in the female ratio from about the 10th till the 20th year; this is the nubile period when the tendency is to understate the age of unmarried women, and overstate the age of the married.

Age period	Death rate per mille (average of decade)		Proportion of females to 1,000 males
	Male	Female	
All ages	30·4	29·8	932
Under 1 year ..	142·6	125·8	1,001
1–5	55·2	49·2	1,014
5–10	14·3	15·5	899
10–15	10·7	12·9	889
15–20	10·9	13·5	827
20–30	16·2	17·7	971
30–40	20·3	21·3	926
40–50	27·2	22·1	957
50–60	43·8	35·2	869
60 and over	91·6	80·0	1,067

It was the depression at this point that gave rise to von Mayr's suspicion that the Indian Census was vitiated by large omissions of females because disclosure of information regarding women particularly of the nubile ages was regarded as shameful. As pointed out in para. 227, there is no necessity to assume that the girls of these ages were omitted entirely from the returns, but this prejudice, which does exist, may have given rise to other forms of falsification such as deliberate heaping at the earlier age group, in the case of the unmarried and similar excess for the married at the next higher age-group. Taking the case of Hindus and Musalmans—the two communities with whom this tendency may be said to be at all operative, we see from Subsidiary

* *Vide* Subsidiary Table IX of Chapter V.

** *Vide* Para. 198 of Chapter V.

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Table II, that the later census figures show a smoother progression than before. The sex ratio for ages 0-30 shows a progressive improvement in the female population. With the Hindus, it may be noticed that in the earlier census there was an undue heaping at 5-10 as compared to 10-15, which was then the marriage age, and showed the lowest depression. In 1911, and still more markedly in 1921, this depression seems to have shifted to the ages 15-20, proving fairly convincingly that the age of marriage has risen. The inflation at 5-10 has also diminished in the last two censuses probably as a result of this circumstance. There is a further reason for this diminution. The operation of the Infant Marriage Regulation in the State may have resulted in the return of many females of these ages in the age-group 10-15, so that those that are not married may be safely married off below the prescribed limit and that no penalty may attach to those that are already married against the provisions.

Age period	Hindu				Musalman			
	1891	1901	1911	1921	1891	1901	1911	1921
5—10	913	908	835	895	942	968	884	928
10—15	778	822	802	888	790	833	844	898
15—20	822	842	839	799	870	906	881	928
20—25	998	942	962	982	1003	990	1007	1027
0—30	920	898	904	917	938	936	936	952

237. Deficiency of females in the age-group 10-20—Apart from any question of falsification, it is true that there is a great deficiency of females at these two age-groups. Early marriage and premature cohabitation no doubt contribute to this result. The effect of Purda has been mentioned as one of the active causes towards lowering the proportion of females. Finally the operation of infanticide may be dismissed. One Census Committee (from Bhadran) has indeed reported that the custom has been revived in certain areas through the economic stress of recent years, and the break-down of the old restrictions on "bridegroom price" mentioned in para. 301 of Mr. Govindbhai's Report. But there is no evidence to show that actual cases have occurred pointing to a revival of the practice. What has happened probably is greater neglect of female life in the child population. Even here, the charge of greater neglect in recent years cannot be always sustained. In the margin, comparative proportions are given for females aged 0-5 for the two censuses amongst certain castes, amongst whom it is alleged that neglect of female children is rife. Amongst the Lewas it is true that this census shows a smaller proportion of female children. Part of the reason may be owing to the raising of the age of marriage, and the special circumstance noted in para. 236 above of the Infant Marriage Act of the State. Generally the Indian loves his children and it is hardly the case now that there is wilful destruction of female life, however strenuous the economic conditions.

Name of caste	Proportion female children aged 0-5 to 1000 male in	
	1911	1921
Rajput	904	928
Lewa Kanbi ..	909	886
Koli	961	1012
Wagher	766	1020
Maratha	943	985

The Lewa Kanbi figures are however important. Since 1901, the proportion of female children aged 0-5 is continuously and seriously decreasing. In 1901, it was 1,022, in 1911, the proportion dwindled down to 909, and now it is 886. The decrease is serious; apart from the element of falsification of returns, there is the neglect of female life. But even if this neglect is admitted, it cannot be proved that it exists now to a great extent than before. The decrease therefore must be ascribed mainly to an increasingly high masculinity at birth. Why more male children are born than female amongst them now than 20 years ago I am unable to explain, but at any rate this increasing deficiency of females has no doubt intensified the marriage problem in that caste.*

* It is curious that this growing deficiency of females in the whole Kanbi community leads to different results in the different sections. Amongst the *Kulin* Patidars according to the hypergamous rule bridegrooms can marry low, but never the brides. There is thus a deficiency of eligible bridegrooms for *Kulin* brides and consequently a high bridegroom-price; further for the honour they confer by marrying lower, the *Kulin* bridegrooms exact a heavy fee. Among Vakal and Kahnam Patidars who rank lower the deficiency of females generally favours the practice of bride-price.

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SUBSIDIARY TABLE I.—General proportions of the Sexes by Natural Divisions

Natural Divisions	Number of Females to 1,000 Males							
	1921		1911		1901		1891	
	Actual population	Natural population	Actual population	Natural population	Actual population	Natural population	Actual population	Natural population
1	2	3	4	5	6	7	8	9
Baroda State	932	922	925	927	936	970	928	929
Central Gujarat	886	882	872	Not available.	891	Not available.	883	Not available.
Baroda City	837		853		853		852	
North Gujarat..	953	942	947		956		950	
South Gujarat	990	987	982		992		985	
Kathiawad	934	868	940		939		920	

SUBSIDIARY TABLE II.—Number of Females per 1,000 Males at different Age-periods by Religion at each of the last three Censuses

Age	All Religions			Hindus			Musalmans			Animists			Jains		
	1901	1911	1921	1901	1911	1921	1901	1911	1921	1901	1911	1921	1901	1911	1921
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0—1	1,004	977	1,001	982	978	1,000	966	960	1,005	1,163	999	1,011	1,092	954	933
1—2	976	1,025	1,035	951	1,033	1,030	963	983	1,019	1,086	969	1,110	1,203	1,136	1,105
2—3	1,028	1,003	1,074	1,016	1,000	1,068	935	1,034	1,078	1,110	1,041	1,144	1,161	970	1,033
3—4	1,060	1,077	1,064	1,056	1,079	1,077	1,030	1,048	1,044	1,093	1,085	993	1,083	1,060	1,008
4—5	1,032	936	910	1,021	924	893	1,027	985	959	1,081	1,004	1,009	1,152	1,005	1,014
Total 0—5	1,026	1,000	1,018	1,013	999	1,007	988	1,002	1,019	1,109	1,023	1,040	1,135	1,009	1,004
5—10	922	846	899	908	835	895	968	884	928	1,012	909	898	926	878	933
10—15.. ..	828	817	880	822	802	888	833	844	898	879	955	895	857	899	876
15—20.. ..	850	854	827	842	839	799	906	881	928	893	1,083	1,030	799	852	894
20—25.. ..	945	979	1,024	942	962	982	990	1,007	1,027	921	1,221	1,338	932	1,059	1,059
25—30.. ..	918	944	934	901	930	929	959	966	927	1,063	947	965	841	988	976
Total 0—30.. ..	909	914	927	898	904	917	936	936	952	981	1,007	996	908	948	949
30—40.. ..	897	925	926	899	920	925	883	966	953	883	896	889	891	1,009	1,028
40—50.. ..	1,010	922	957	1,009	928	962	1,017	876	947	995	812	864	1,006	1,033	1,033
50—60.. ..	1,040	929	869	1,053	932	870	994	900	808	898	809	874	1,137	993	970
60 and over ..	1,307	1,132	1,067	1,293	1,031	1,080	1,452	1,116	1,031	1,194	1,028	858	1,481	1,316	1,156
Total 30 and over ..	990	945	941	987	945	943	993	944	934	949	870	876	1,020	1,048	1,035
Total all ages (actual population) ..	936	925	932	929	919	927	956	939	945	971	961	955	951	987	984
Total all ages (natural population).	970	927	922				Not available.								

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SUBSIDIARY TABLE III.—NUMBER OF FEMALES PER 1,000 MALES AT DIFFERENT AGE-PERIODS BY RELIGIONS AND NATURAL DIVISIONS (CENSUS OF 1921)

Age	Central Gujarat						Baroda City					North Gujarat	
	All Religions	Hindus	Musalmans	Jains	Animists	Christians	All Religions	Hindus	Musalmans	Jains	Christians	All Religions	Hindus
1	2	3	4	5	6	7	8	9	10	11	12	13	14
0—1	938	921	1,042	894	1,120	1,090	1,027	1,010	1,061	1,240	750	1,036	1,042
1—2	1,003	1,015	911	1,080	1,050	745	1,021	970	1,390	1,143	889	1,052	1,053
2—3	1,032	1,023	1,086	1,099	1,217	765	1,032	1,004	1,081	1,269	2,000	1,111	1,016
3—4	1,055	1,050	1,180	1,075	1,023	805	1,148	1,180	974	1,158	1,667	1,084	1,090
4—5	935	930	915	1,012	1,033	1,096	940	967	833	1,000	1,100	870	856
Total 0—5	987	981	1,032	991	1,086	921	1,029	1,025	1,020	1,171	1,109	1,020	1,018
5—10	860	851	905	849	946	1,038	899	885	983	862	768	910	906
10—15	874	870	869	770	945	1,260	759	765	834	859	196	889	888
15—20	775	769	765	915	922	870	787	790	876	557	435	803	788
20—25	955	956	910	932	1,110	1,000	813	824	762	874	778	1,000	988
25—30	880	880	845	879	1,013	861	743	765	613	935	721	969	966
Total 0—30	889	885	894	881	997	1,002	836	840	836	864	552	930	925
30—40	867	864	868	904	957	843	729	741	710	689	475	991	984
40—50	919	927	851	930	892	1,000	818	834	780	712	517	1,005	1,000
50—60	779	784	755	783	674	717	929	952	829	1,010	778	919	921
60 and over	1,009	1,015	1,028	1,028	709	690	1,123	1,171	986	1,293	500	1,105	1,111
Total 30 and over	881	884	860	901	847	846	839	857	789	827	530	994	991
Total all ages (actual population) ..	886	884	880	890	946	946	837	847	816	849	546	953	949
Total all ages (natural population)	*882	..	..	..	..	..	..	..	..	..	..	942	..

* Including City of Baroda.

Age	North Gujarat		South Gujarat						Kathiawad		
	Musalmans	Jains	All Religions	Hindus	Musalmans	Jains	Parsis	Animists	All Religions	Hindus	Musalmans
1	15	16	17	18	19	20	21	22	23	24	25
0—1	996	944	1,024	1,043	1,030	909	1,261	1,002	982	1,000	881
1—2	977	1,204	1,051	988	1,157	917	816	1,120	1,029	1,023	1,053
2—3	1,118	1,053	1,087	1,037	1,115	893	1,104	1,136	1,021	1,040	932
3—4	1,044	957	1,036	1,097	966	786	1,131	991	1,028	1,041	916
4—5	1,085	1,011	960	916	852	944	1,141	1,006	957	955	952
Total 0—5	1,049	1,009	1,027	1,019	1,007	886	1,111	1,036	1,000	1,010	933
5—10	952	953	922	948	956	940	964	893	926	931	868
10—15	900	908	949	1,008	985	803	903	890	887	884	906
15—20	979	960	1,013	970	1,168	758	1,091	1,043	817	796	1,033
20—25	1,102	1,155	1,229	1,109	1,239	831	2,316	1,364	1,030	1,004	1,250
25—30	989	1,017	1,027	1,053	1,139	711	2,184	963	924	896	1,176
Total 0—30	986	988	1,009	1,012	1,055	825	1,226	996	931	924	982
30—40	1,019	1,147	957	988	1,211	720	1,625	883	888	874	1,013
40—50	1,014	1,146	952	984	1,175	590	1,887	866	959	954	1,007
50—60	823	1,062	919	901	905	1,032	1,632	900	869	880	798
60 and over ..	981	1,214	1,015	1,040	1,106	1,076	1,438	875	1,153	1,163	1,114
Total 30 and over ..	973	1,138	956	978	1,123	787	1,633	880	939	934	986
Total all ages (actual population)	981	1,048	990	999	1,080	810	1,387	956	934	928	983
Total all ages (natural population)	..	..	987	..	..	..	..	..	868	..	..

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SUBSIDIARY TABLE IV.—Number of Females per 1,000 Males for Certain selected castes

Caste	Number of females per 1000 Males						
	All ages	0—5	5—12	12—15	15—20	20—40	40 and over
1	2	3	4	5	6	7	8
Hindu							
Bhangi	947	947	866	807	807	1,065	976
Bharwad	936	1,065	966	1,028	893	873	915
Bhavsar	1,048	952	902	843	959	1,173	1,152
Brahman—Anavala	889	938	863	749	865	959	854
,, —Audich	970	1,002	923	878	924	964	1,031
,, —Deshastha	931	1,124	1,079	844	779	845	957
,, —Mewada	909	804	899	710	1,178	889	961
,, —Nagar	1,039	1,131	921	962	1,178	1,141	971
,, —Tapodhan	991	930	906	1,108	941	953	1,125
Chamar	979	984	849	1,022	998	1,000	1,071
Darji	1,064	953	917	1,035	1,072	1,144	1,170
Dhed	1,031	1,046	944	1,044	978	1,091	1,035
Ghanchi	944	940	872	829	856	1,034	966
Hajam	962	987	876	895	813	1,048	1,000
Kanbi—Anjana	963	935	927	1,029	767	936	1,138
,, —Kadwa	957	1,054	927	1,011	873	923	997
,, —Lewa	857	886	849	863	796	851	874
Koli	904	1,012	817	957	828	956	861
Kumbhar	951	995	870	1,013	764	972	1,040
Luhana	990	816	901	810	1,161	1,120	1,017
Luhar	1,024	966	863	1,084	925	1,113	1,117
Maratha (Kshatriya)	850	985	1,005	797	870	704	952
Prabhu	896	1,122	882	916	805	898	813
Rabari	917	969	898	940	840	890	971
Rajput	906	928	877	935	795	895	973
Soni	931	879	911	809	887	940	1,018
Sutar	917	1,024	944	857	868	880	934
Vaghari	884	977	861	821	782	1,008	744
Vagher	807	1,020	846	1,019	608	539	994
Vania—Disawal	1,001	1,029	1,079	1,048	844	998	1,005
,, —Khadayata	777	883	850	618	717	771	756
,, —Lad	888	826	871	746	849	909	956
,, —Modh	883	900	869	837	862	859	936
,, —Shrimali	931	1,020	1,049	818	712	992	861
Jain							
Vania Shrimali	1,001	978	946	990	1,009	1,043	1,002
Animist and Hindu							
Bhil (Hindu)	923	1,064	916	802	807	954	836
,, (Animist)	964	1,087	951	959	911	1,022	820
Chodhra (Hindu)	1,036	1,633	1,295	515	1,908	730	648
,, (Animist)	942	1,051	889	987	977	984	821
Dhodia (Hindu)	1,003	1,492	664	1,265	962	1,157	800
,, (Animist)	982	1,001	910	1,088	968	1,048	906
Dubla (Hindu)	969	1,015	923	937	962	1,036	896
,, (Animist)	1,011	1,119	1,014	897	843	1,161	847
Nayakda (Hindu)	1,040	1,033	1,590	966	1,083	675	963
,, (Animist)	959	1,046	919	1,017	1,205	927	889
Musalman							
Memon	967	1,133	894	1,026	1,038	1,002	847
Molesalam	919	1,062	893	845	884	942	871
Pathan	824	1,020	837	731	862	782	807
Saiyad	965	1,009	934	908	912	1,000	956
Shaikh	916	1,057	897	806	928	885	937
Vohora	1,045	1,018	959	1,049	1,087	1,173	974
Parsi							
Parsis	1,323	1,123	973	853	1,097	1,743	1,501
Christian							
Indian Christian	861	930	983	951	761	814	789

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SUBSIDIARY TABLE V.—ACTUAL NUMBER OF BIRTHS AND DEATHS REPORTED FOR EACH SEX DURING THE DECADES 1891-1900, 1901-1910 and 1911-1920

Years	Number of births			Number of Deaths			Difference between columns 2 and 3. Excess of latter over former (+) Defect (—)	Difference between columns 5 and 6. Excess of latter over former (+) Defect (—)	Difference between columns 4 and 7. Excess of former over latter (+) Defect (—)	Number of female births per 1,000 male births	Number of female deaths per 1,000 male deaths
	Male	Female	Total	Male	Female	Total					
1	2	3	4	5	6	7	8	9	10	11	12
1891	17,425	14,612	32,037	15,301	12,032	27,333	—2,813	—3,269	+4,704	839	786
1892	17,059	14,502	31,561	19,364	15,997	35,361	—2,557	—3,367	—3,800	850	826
1893	14,152	12,081	26,233	26,558	22,807	49,365	—2,071	—3,751	—23,132	854	859
1894	20,022	17,326	37,348	27,997	22,354	50,351	—2,696	—5,643	—13,003	865	798
1895	19,558	16,718	36,276	22,814	18,352	41,166	—2,840	—4,462	—4,890	855	804
1896	22,138	19,749	41,887	24,978	19,703	44,681	—2,389	—5,275	—2,794	892	789
1897	21,038	17,871	38,909	20,098	16,268	36,366	—3,167	—3,830	+2,543	849	809
1898	19,340	16,641	35,981	23,233	19,285	42,518	—2,699	—3,948	—6,537	860	830
1899	22,553	19,487	42,040	26,076	22,962	49,038	—3,066	—3,114	—6,998	864	881
1900	16,846	14,557	31,403	75,763	55,498	131,261	—2,289	—20,265	—99,858	864	733
Total 1891—1900 ..	**190,131**	**163,544**	**353,675**	**282,182**	**225,258**	**507,440**	**—26,587**	**—56,924**	**—153,765**	**860**	**798**
1901	7,330	6,091	13,421	65,361	50,976	116,337	—1,239	—14,385	—102,916	831	780
1902	22,422	19,598	42,020	30,684	27,214	57,898	—2,824	—3,470	—15,878	874	887
1903	19,219	16,876	36,095	31,556	30,162	61,718	—2,343	—1,394	—25,623	878	956
1904	20,994	18,736	39,730	33,262	31,630	64,892	—2,258	—1,632	—25,162	892	951
1905	22 967	20,617	43,584	24,724	23,503	48,227	—2,350	—1,221	—4,643	898	951
1906	22,782	20,101	42,883	24,352	21,869	46,221	—2,681	—2,483	—3,338	882	898
1907	22,434	19,766	42,200	33,013	31,099	64,112	—2,668	—1,914	—21,912	881	942
1908	24,986	22,347	47,333	25,455	22,275	47,730	—2,639	—3,180	—397	894	875
1909	25,937	22,666	48,603	22,666	20,037	42,703	—3,271	—2,629	+5,900	874	884
1910	25,860	22,648	48,508	23,742	20,794	44,536	—3,212	—2,948	+3,972	876	876
Total 1901—1910 ..	**214,931**	**189,446**	**404,377**	**314,815**	**279,559**	**594,374**	**—25,485**	**—35,256**	**—189,997**	**881**	**888**
1911	28,349	25,275	53,624	26,565	23,966	50,531	—3,474	—2,599	+3,093	892	902
1912	30,926	27,719	58,645	24,506	21,344	45,850	—3,207	—3,162	+12,795	896	871
1913	28,321	25,180	53,501	27,759	24,901	52,660	—3,141	—2,858	+841	889	897
1914	33,179	29,789	62,968	26,948	23,604	50,552	—3,390	—3,344	+12,416	898	876
1915	32,951	29,328	62,279	24,654	21,663	46,317	—3,623	—2,991	+15,962	890	879
1916	33,911	29,959	63,870	25,363	22,219	47,582	—3,952	—3,144	+16,288	883	876
1917	33,301	29,477	62,778	28,839	25,366	54,205	—3,824	—3,473	+8,573	885	880
1918	32,366	28,495	60,861	41,143	40,045	81,188	—3,871	—1,098	—20,327	880	973
1919	24,803	22,195	46,998	66,508	62,624	129,132	—2,608	—3,884	—82,134	895	941
1920	29,057	25,809	54,866	29,176	24,862	54,038	—3,248	—4,314	+828	888	852
Total 1911—1920 ..	**307,164**	**273,226**	**580,390**	**321,461**	**290,594**	**612,055**	**—33,938**	**—30,867**	**—31,665**	**890**	**904**
NATURAL DIVISION											
Central Gujarat ..	91,159	78,907	170,126	98,295	87,229	185,524	—12,192	—11,066	—15,398	866	887
Baroda City.. ..	10,692	9,751	20,443	18,592	18,346	36,938	—941	—246	—16,495	912	987
North Gujarat ..	119,216	104,833	224,049	122,444	107,088	229,532	—14,383	—15,356	—5,483	879	875
South Gujarat ..	53,838	50,307	104,145	52,016	50,040	102,056	—3,531	—1,976	+2,089	934	962
Kathiawad	32,259	29,368	61,627	30,114	27,891	58,005	—2,891	—2,223	+3,622	910	926

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SUBSIDIARY TABLE VI.—NUMBER OF DEATHS OF EACH SEX AT DIFFERENT AGES

AGE PERIOD	1912		1914		1915		1917		1918		Total		Average number of female deaths per 1,000 male deaths
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
0—1	6,039	5,340	5,334	4,577	6,021	5,038	6,024	5,383	6,758	5,896	30,176	26,234	869
1—5	7,276	6,667	4,771	4,200	5,413	4,750	5,836	5,697	10,799	9,560	34,095	30,874	906
5—10	1,420	1,256	1,178	981	1,241	1,043	2,679	2,840	3,722	3,528	10,240	9,648	942
10—15	639	595	617	664	663	596	2,374	2,782	2,678	2,465	6,971	7,102	1,019
15—20	640	653	664	648	541	596	1,766	1,698	2,975	2,939	6,586	6,534	992
20—30	2,077	2,158	2,083	2,177	1,812	2,065	4,817	4,972	11,472	12,269	22,261	23,641	1,062
30—40	2,093	1,913	2,199	2,081	2,011	1,916	4,879	5,011	10,080	10,555	21,262	21,476	1,010
40—50	2,277	1,594	2,379	1,664	2,240	1,658	4,300	3,862	7,450	5,782	18,646	14,560	781
50—60	2,279	1,630	2,456	1,699	2,309	1,638	3,978	3,178	5,247	4,335	16,269	12,480	767
60 and over ..	3,019	3,095	2,973	2,972	3,112	2,919	4,490	4,622	5,327	5,295	18,921	18,903	999

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PART II

The Size and Sex Constitution of Families

238. Reference to Statistics—In this Part will be discussed the figures compiled in connection with the allied questions of the size of the Household and the comparative fertility of the different communities in the State. These problems have a bearing not only on Sex but also on Marriage, and therefore the section dealing with them is appropriately placed as an inter-chapter between Chapters VI and VII. The statistical material is contained in State Table XXVIII and the eight tables detailed below.

239. Nature and Value of the Enquiries made: Size of the Normal Household Enquiry—There were two enquiries made in connection with these questions : at the time of the Preliminary Record, an enquiry was made into the number of persons constituting the normal household. As explained in Chapter I (para. 12), care was taken in regard to this enquiry to exclude from the calculation all casual visitors and servants. The enumerator was to record in the House list the actual number of persons that normally resided in the house. The data thus obtained have been utilised already as a rough indication of the normal population of the State, as apart from the *de facto* population returned in a synchronous census. This enquiry did not profess to throw any direct light on fertility or birth rate, nor did it seek to isolate the influence of the nature of migration on the sex ratio or the size of the household. State Table XXVIII gives the main results of this enquiry by divisions.

240. The Comparative Fertility Enquiry—The second enquiry was independent of the Census and spread over a long period. Following the precedent of the Central Provinces enquiry set by Mr. J. T. Marten in 1911, a special investigation was conducted by the State Census authorities. The novelty of the enquiry, the intimate nature of the questions asked and the optional character of the answers required made it imperative that the General Census Schedule should not be complicated with its items. But the Charge Superintendents were asked to pick out specially qualified men from amongst the Enumerators and Supervisors for this work. To ensure the cordial co-operation of the people and allay their suspicions, the Police agency was entirely eliminated. As far as possible efficient teachers and the more intelligent *talatis* (village accountants), *tajvijdars* (circle inspectors), and even sub-assistant surgeons were engaged for the task. The Educational Department very kindly undertook to co-operate and to advise its women teachers to take up the work wherever called upon to do so. The attitude of the people, as soon as they realised the character and scope of the enquiry, was on the whole excellent. The employment of women teachers for the work dispelled much ground for discontent. Certain elected chairmen of municipalities, notably in Dabhoi and Vadnagar, also lent their enthusiastic aid. Altogether 5,007 *parwanas* or permits were issued by the census office to the special enumerators engaged for this work, including 50 women. Some of these women teachers were invaluable in their assistance, and I take leave here to express my high appreciation of the interest they evinced and the careful and accurate work they turned out. Books containing printed perforated slips (some of 40, but the majority having 80 slips) were distributed in every taluka. Altogether 351,000 slips were thus served out : each slip was to return information for one married female aged thirteen and over. Husbands who had more than one wife had to return as many slips as they had wives. Normally only the female who was continuously married to one husband and who had her husband alive at the time of the enquiry was the type of cases taken up. But the cases of women who had become widows before attaining maturity and had remarried at an early age, *e.g.*, before twenty, and also of others who lost their husbands after they had completed 45 years of age could also be taken up exceptionally. The questions were usually asked of the husband, if the enquirer was a man, but where social habits did not prevent it, the male enquirer could even at his discretion ask the wife. Adult married women did not usually resent such questions. The women teachers were of course to approach the married women directly. The enquiring staff were specially enjoined to confine their enquiries mainly to completed marriages or else to such marriages whose duration had been sufficiently

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long to yield satisfactory fertility data. The questions that were asked are more detailed than those of the pioneer enquiry started by Mr. Marten. They related to the caste or religion and occupation of the husband, the ages of the couple at the time of the enquiry, the duration of their *present* marriage, the number of children born alive to the marriage, how many of them were boys and how many girls, how many were alive at the time of the enquiry, and lastly the sex of the first born child.*

241. Nature of the Sex Tables: their relative value—The work was spread over from December 1920 till July 1921, and finally 163,217 slips were received in the Census Office duly filled in. These were scrutinised at the Census Office by a specially trained staff. Numerous slips were rejected which seemed wrong or suspicious, it being thought desirable rather to have a smaller number of guaranteed observations than to gather together a mass of figures the trustworthiness of which was doubtful. At the final sorting stage certain slips collected from backward areas were rejected wholesale, and a total of 131,235 slips was finally retained. These were divided first into two heaps according to the duration of marriage, the first heap containing slips relating to completed marriages, *i. e.*, where the wife had attained 45 years of age, and the second dealing with continuing marriages, *i. e.*, where fertility was still a continuing factor. There were 28,061 cases of the first type and 103,174 of the second. The eight Tables printed at the end of this part were compiled from one or both of these sets of observations, as indicated in the marginal statement. The relative value of these Tables varies inversely with their complexity. The first two and the eighth Tables are simple enough and are fairly reliable. The only difficulty about Table VII is the large number of observations it deals with. Table IV is a little more difficult and has been compiled simply with a view to find out whether occupation, as in England, has any influence on the size of families. The Caste Table (Table IV) and the next two Tables are the most difficult, in that they seek to correlate—the last two more than Table IV—fertility with the age at marriage of the couples. The age at marriage, as will appear from the above summary of the questionnaire, was not directly asked and had to be inferred from the present age and the duration of marriage. The present age is not very reliable as we know already from Chapter V. The duration of marriage is roughly true—truer perhaps than the age returned; the ages at marriage can only be accepted therefore as approximations. It is regrettable that this is so, for the age at marriage, at least of the wife, is one of the most important factors in the study of comparative fertility. Only very broad inferences can be therefore drawn; and I must ask the reader to accept them as tentative contributions to the problem. Generally as to the size of the family, the responses returned by the people may be fairly trusted. There was no motive on their part to falsify—only their memory may have deceived them about the number of children born—infants who died soon after birth very likely were omitted. Secondly, in their choice of samples, the enumerators may not have bothered much about the childless families thinking presumably that the enquiry did not concern itself about these. On the whole however the instructions were very carefully followed. As we see, of the total slips accepted, 28,061 or 21 per cent. referred to completed marriages, and 86,480 or 66 per cent. were cases of marriages lasting at least for 15 years.

SEX TABLES

Number	Name of Table	Prepared from
I	Sex of the First Born	Completed Marriages.
II	Size and Sex Constitution of Families ..	Do.
III	Size of Families by occupation of husband ..	Do.
IV	Size of Families by Caste or Religion of husband.	Do.
V	Average size of Family correlated with age at marriage of wife	Do.
VI	Age of Husband at last marriage	Do.
VII	Duration of Marriage correlated with Caste or Religion of Families.	Completed and continuing marriages.
VIII	Proportion of Fertile and Sterile marriages ..	Continuing Marriages.

* The name of the husband or the wife was not asked—the identification was possible through the name of the Circle and the number of the block indicated on the cover of the book itself.

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242. The Size of the Normal Household—The results of the first enquiry may first be briefly dealt with. The margin gives a summary table prepared from State Table XXVIII, for the State as a whole and the City of Baroda. The normal household averages in the State at 4·1 persons. The average in the City is only 3·4. The largest number of households in the State consists of four persons, while the mode in the City is only one. 44 per cent. of the City households are composed of less than three persons each. It is a significant commentary on the social situation in the State that in its capital the majority of households are of small sizes. In para. 125 of Chapter II, already it has been shewn that the very rich as well as the very poor type of households were smaller in size than the households in middling circumstances. It may be thought that the City population contains a large element, the bulk of whom are males in temporary residence who have left their wives and families away in their native places. It is true that 353 per mille of the total inhabitants of the City have their birthplaces outside it ; but it is not true that the majority of these immigrants are without their families, for in that case, the Sex ratio would have been preponderantly male. Instead, the proportion of females amongst them is 721 per 1,000 males while the mean ratio for the City as a whole is 837. We shall see later from the Marriage Statistics whether the main reason for this smallness of the City family is due to causes associated with decay in fertility, to birth control, or to a low rate of survival or to all the three forces co-existing.

Size of Household containing	Number of families in each class		Percentage of families to total	
	State	Baroda City	State	City
One person	63,604	5,944	13	23
Two persons ..	79,022	5,299	16	21
Three persons ..	83,729	4,189	17	16
Four persons ..	84,078	3,461	17	13
Five persons ..	72,578	2,615	14	10·5
Six persons	51,932	1,672	10	6·5
Seven persons ..	31,587	1,089	6	4
Eight persons ..	17,031	582	3	2
Nine persons ..	8,755	322	2	1
Ten persons .. and over ..	11,516	603	2	3

243. Sex of the First Born—We now come to the problems dealt with in the Sex Tables. On the question of primogeniture so much has been written that I do not wish to add anything that will help to intensify the existing darkness on the subject. But it is useful to note that the number of observations from which the data regarding the Sex of the First Born are compiled is a total of 148,075 births. In the margin the Sex ratio is indicated for the total births, and the first and subsequent births. This statement has been prepared from Sex Tables I and II. It shows how the very high masculinity of first births is modified considerably by the sex of the subsequent births. The European and Australian experience referred to by Mr. Jastrzebski's paper—quoted so often in Part I of this Chapter—does not show so sharp a contrast as this between the sex of first and subsequent births. For Australia, Knibbs gives the respective ratios 1,052 and 1,050. Mr. Jastrzebski himself gives the figures for the City of Budapesth, *viz.*, 1,051 and 1,049. The sex ratio arrived at for total births in this enquiry seems to correspond very closely to the sex ratio at birth shown in the Vital Statistics which is 1,124 males to 1,000 females. The figures for the City of Baroda show an even higher masculinity at first birth than in the State. Sex Tables I and II* show that in Baroda City, from the experience of 7,664 births, the sex proportions of the first born, of subsequent births and of total births show a preponderance of males to the extent of 1,409, 1,155 and 1,200 respectively. The vital statistics however indicate, as pointed out in para. 235, a masculinity of 1,097 for total births. The vital returns must be accepted as more representative than the sampled data, and indeed, from our general conclusion that urban areas lower masculinity, it is perhaps safer to presume that in the City, the sex of the first born is less masculine than in rural areas. Possibly the influence of ruralisation is much stronger in India than in Europe, and that probably explains the higher masculinity generally in this country and in regard to first births in particular, compared to the state of things in Western countries.

Births	Proportion of	
	Female to 1,000 Male	Male to 1,000 Female
Total Births	872	1,147
First Births	718	1,392
Subsequent Births ..	910	1,099

*Compilation registers of these Tables are meant.

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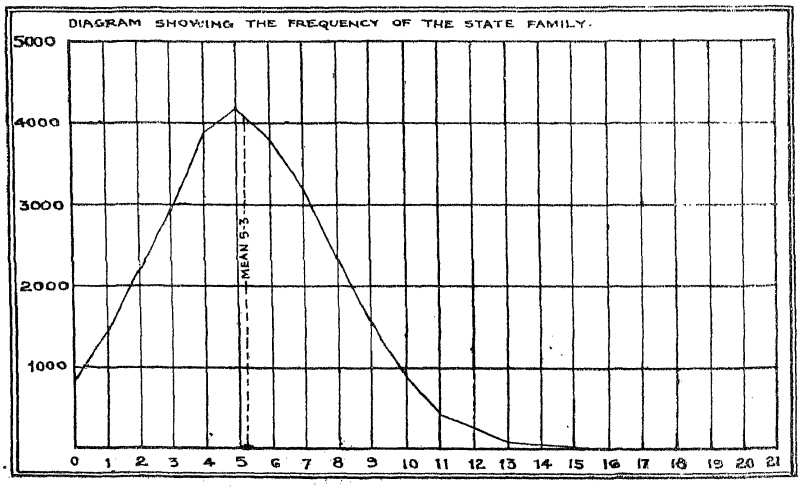
One other reason must be sought in the greater disparity between the ages of the couples at marriage. Nearly 38 per cent. of husbands in the completed marriages are older than their wives by at least ten years. In Europe on the other hand there is a very high correlation between the ages of husbands and wives. The "Hofacker-Sadler" law, which Mr. Jastrzebski has relegated to "the limbo of exploded theories", propounded that the masculinity was greater where the father was older, and less when the reverse was the case. There is no doubt however that the older age of the husband has a great influence on the sex of the first born and indeed on the sex of the family.

Lastly before we leave the subject of first births it is interesting to draw the attention of scientific enquirers to the phenomenon† that the sex of the first born —particularly if it is a male—very largely determines the sex of the family. Sex Table I shows that 64 per cent. of families where the first born was a male showed a predominance of males. In regard to females the facts are not so convincing, here the proportion is a little less than half. When we consider that the prevailing disposition in the population is towards a pronounced masculinity we realise that the tendency above referred to exists even in respect of female first births although much retarded by other opposing factors.

244. Size of the State Family—Sex Table II shows the frequency of families of different sizes. The diagram given below plots these frequencies—the *abscissae* denoting the number of children born to a marriage, and the *ordinates* the total number of families. The Table is compiled solely from cases of completed marriages so that the curve represents fairly the normal fertility of married



life in the State. The number of completed marriages "sampled" for the purpose of the enquiry is, as already pointed out, 28,061. Out of these cases, 3,675 are of those, where the woman became a widow after she attained 45 years of age. That is to say, 24,386 are cases of married women aged 45 and over, whose husbands were alive at the time of the enquiry and who had completed families. The census shows (Imperial Table VII) that married women aged 45 and over in the State numbered 57,535, so that the data resulting from the enquiry form 42 per cent. of the total available.

The above diagram shows that the size of the family most favoured is that of five children, but the number of larger sized families rapidly declines until there are only 11 families with seventeen children and over found from the enquiry. The situation therefore develops a skew-typed curve, such as we have above, where the mode occurring at five children and the average at 5·3 fairly correspond, but the

† This fact was first brought to my notice by a College student who was working in my staff as a compiler, and I present it to my readers for what it is worth.

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middle term (11) is away. The mode constitutes 15 per cent. of the total. Families containing less than six children form 68·5 per cent. The proportion is in reality a little higher. The childless families form according to this enquiry only 3 per cent. of the total. But from the table given in para. 242, we learn that households containing one or two persons (which would presumably correspond to the childless group) form 29 per cent. of the total. I presume that the sex enumerators must have had a notion that the childless and small sized families were not so much required, and that therefore in their selection of samples, they inclined more towards the families of larger sizes. On the other hand, it must be remembered that para. 242 refers to the size of the households as they were at the time of the census, containing completed as well as continuing families, and also taking into account the effect of deaths, migration, etc. Sex Table II is only concerned with completed marriages, and the total number of children born, irrespective of their present condition, whether they are now alive or actually residing with their parents. On the whole, however, taking all the facts into consideration, I am inclined to think that the above curve rather under-represents the frequency of childless and small sized families.

The mean size of the State Family is shewn in Sex Table I to be 528 children for 100 families. On the whole this figure can be accepted. A few old women may have forgotten to give the right number of the children born to them. Perhaps they ignored the little ones that did not survive the perilous first year. On the other hand, they were equally likely to overstate the number of their children. The enquirers were however all local men and as they had plenty of time to make their enquiries, it is trusted that the entries are fairly correct.

It is interesting to compare the size of families found from the present enquiry with the results of the Central Provinces Enquiry and the Scotish Census of 1911.* The Central Provinces Enquiry however does not distinguish between completed and continuing marriages and the size of families therefore has no relation to the average fecundity of the general population. With regard to families of larger sizes, the detailed figures for the Census of Scotland are not given by Dr. Dunlop. But the proportions for 9 children, 10 children, 12 children and 14 children-families in the Scottish census were about 8, 6, 3 and 1 per cent. respectively. The corresponding ratios for the Baroda enquiry are 6, 3, 1 and 2 per cent. Making allowance for errors of record in our State enquiry, one is still forced to the conclusion, that in regard to families of sizes higher than six, the frequency is greater in Scotland than in Baroda.

Families containing	Proportion to total (per cent)		
	In State	In Central Provinces	In Scotland
No Children	3·1	....	11·5
One child	5·1	8·4	5·9
Two children ..	7·8	12·5	7·0
Three ,, ..	10·3	14·2	8·2
Four ,, ..	13·8	14·3	9·1
Five ,, ..	14·9	13·6	9·2
Six ,, ..	13·5	11·2	9·4
Over Six ,, ..	31·5	25·8	39·7
Mean Family ..	5·28	4·8	5·49

245. Size of Family by Occupation—Sex Table III gives the respective sizes of family per occupations. The samples are not all sufficiently representative. One would have liked to examine the very lowest as well as the very highest occupations, but we have only 40 slips of sweepers and scavengers and 98 of lawyers and doctors. The largest samples are however from agriculture, the basic industry; there are 15,933 slips regarding cultivators (cultivating owners and tenants) 2,762 cases of artisans, 2,166 of trade and 2,468 of "general labourers" are the other large items. The marginal statement

Occupation	Average number of children per 100 families
Cultivators of all kinds ..	525
Field labourers	481
Raisers of Livestock	520
Artisans and other workmen ..	518
Trade	554
Public administration	574
Religion	476
General labourers	578
Mean average of State Family ..	528

* I take these from Dr. Dunlop's paper "The Fertility of Marriage in Scotland: a Census Study".

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takes only these and a few other occupations where the slips are sufficiently large to be worth considering. Religion shows a low sized family, probably because religious mendicants with little or no families have been included in that class. "General labourers" show a high average. This may be contrasted with field labourers who have a much smaller average. Cultivators of all kinds have a lower average than the mean size of the State family.

Generally occupation fertilities are not very illuminating. The Scottish Census on the other hand showed that "among the groups of high fertility, labouring, mining and agricultural occupations predominate, while among those of low fertility are included professional occupations and some of the more skilled occupations." In Baroda general labourers indeed show as they do in other parts of the world, a high average of children; persons living on their own income—presumably of good circumstances—have a low incidence of 482. But trade which would *a priori* have implied economic motive shows a higher average than the general mean.

246. Size of Family by Caste—The figures for caste are contained in Sex Table IV. The representative groups are collected in the margin, and the average size of the family in each is compared with the proportion of its children to its married women aged 15-40 (Subsidiary Table IV-A of Chapter V). The two sets of figures correspond fairly except in respect of Kolis. Perhaps the sex enquiry slips, although they were 3,884, were not sufficiently representative of that caste, or else they were not accurate. Fertility amongst Koli women is usually high, because of their aboriginal descent. But it may also be that the ratio of survival amongst Koli children is probably higher on account of the sturdy constitution of their parents than in the general population.

Caste	Average per family	Order according to col. 2	Proportion of Children of both Sexes to married women aged 15 – 40	Order according to Col. 4
1	2	3	4	5
Brahmin	5·26	4	188	2
Vania (Hindu and Jain) ..	5·18	2	189	3
Kanbi	5·25	3	187	1
Koli	4·94	1	209	7
Bhaarwad	5·09	7	205	6
Dhed	5·35	5	192	5
Forest tribes	6·10	8	240	8
Musalman	5·02	6	190	4

247. Influence of Age of Parents on Size of Family—The age returns in this enquiry—probably more reliable than in the Census—are however not reliable enough to be dealt with scientifically. Grouped broadly, however, they have certain features of interest. Sex Table V gives the main figures. The vast majority of marriages in the State take place at 13 or earlier. Of the 28,061 cases dealt with, no less than 22,465 or 80 per cent. were cases of women who began their effective marriage at 13 or 14 years. To these, 117,643 children were born, giving an average of 5·24 children per completed marriage of this class. 3,477 women were married at some age between 15 and 20. These had 19,255 children or an average of 5·54. At 20–25, the average fertility is 5·4. At 25–30, the rate is lowered to 4·97 even below the mean size of the family which as we know is 5·28. Thus even if the marriage is postponed from the thirteenth year on an average by about 4 years, the rate of fertility, instead of diminishing increases by about one third of a child per family. It is only when marriage is postponed till after the 25th year, that there is any risk of diminution of fertility. It may give some consolation to the social reformer in India who advocates late marriages to know that the postponement of the age of marriage to the twentieth year will not reduce the size of the family to any extent. On the other hand the resultant effect will be undoubtedly beneficial to the population.

It is interesting to compare these averages with the results of the Scottish Census. Taking the minimum age of marriage at 17, Dr. Dunlop finds the average size of the completed family at 9·02 children. The woman marrying at 20 has an average of 7·86; at age 25, 5·66; at age 30, 3·89 and so on until at the 40th year, the woman hardly expects to get one child. The average rate of fertility, we see, is much higher in Scotland than in Baroda. But on the other hand, the post-

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ponement of marriage there to 25 or even 20 results in a serious diminution of fertility while the Baroda enquiry shows no such tendency till the 25th year.

The difference of age between the couples has some influence on the size of family. Generally the husbands are older—much older sometimes—than the wives. In the present enquiry, as appears from the margin, there are only 21 cases of women belonging to a higher age group than their husbands. These may be neglected. A marginal statement has been thus prepared from Sex Table VI. It shows generally that parity of age raises fertility. We learn from Sex Table V that women aged 20-30 generally have an average of 5·31 children but when they are married to husbands aged 20-30, the average is raised to 5·42. Similarly wives aged 13-20 yield an average of 5·28 children, but when married to husbands of the same age group, they have an average of 5·34. *Per contra*, great disparity of age between the couple diminishes fertility. As we see from the table, husbands aged 20-30 married to wives under 20 have an average family of 5·42. But if the husband is older than 30, the average is lowered to 5·28.

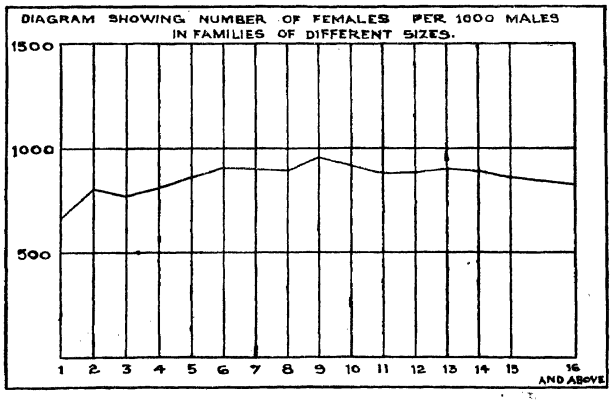
Age of husband	Age of wife			Total wives
	13—20	20—30	30 and over	
13—20	14,131	17	..	14,148
20—30	7,618	1,045	4	8,667
30 and over	856	689	26	1,571
Total husbands ..	22,605	1,751	30	..

Husbands aged	Average of children born with — Wives aged		
	13—20	20—30	30 and over
13—20	5·34	..	..
20—30	5·42	5·42	..
30 and over ..	5·28	5·25	3·46

248. Size of Families in the City of Baroda—The marginal table contrasts the size of families in the State with the situation in the City*. 38 per cent. of the City families are of three children and under, while in the State, the proportion of such families is only 26. The proportion of childless families in the City is more than double that in the State. 45 per cent. of families in the State, as against only 36·5 in the City are large sized (with 6 children and over). The average size of the completed family is 4·7 in the City as against 5·28 in the State as a whole. Generally the rate of fecundity in the City is lower than the average rate for the State. It is not surprising therefore that the bulk of the City households are small-sized.

Size of Families containing	Percentage of such families to total	
	of State	of City
No children ..	3·1	7·1
One child	5·1	8·5
Two children ..	7·8	11·5
Three ,, ..	10·3	10·6
Four ,, ..	13·8	13·6
Five ,, ..	14·9	12·2
Six ,, ..	13·5	10·1
Seven ,, ..	11·4	9·0
Eight ,, ..	8·3	5·7
Nine ,, ..	5·6	4·1
Ten and above ..	6·2	7·6

249. Sex Constitution of Families—The question asked about the number of children born alive to the marriage included a specification as to their sex. The diagram given in the margin shows the number of females per 1,000 males in families of different sizes in the State. The ratio of



* The City proportions are prepared from the Compilation Register for Sex Table II.

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masculinity in one child families appears to be even higher than amongst first births. The number of females born is always less than the number of males born; but the proportion of female children in the family tends to increase with the increase in the size of the family; the curve however shows a wavy line; at nine children, the curve attains its highest point, thence it tends to diminish until in the families of very large sizes, *e.g.*, fourteen to sixteen masculinity is re-established. Only 11 cases of families containing seventeen children and over are taken into account and these show again a rise in the female proportion. This may be due as Mr. Marten thinks "partly to the lessening of the influence of the first born who is weighted in favour of a male, and partly apparently to a real increase in the probability of female births as the family gets larger."

The question of Sex at Birth has been so often discussed in census reports of previous years that only a brief reference on this occasion need be made. There are two groups of solutions offered as answers to the question why a particular individual embryo becomes a male or a female. The first group supposes that external conditions determine the result; and the other group attributes it to the differences of the sexual cells themselves. It is only with the first group of theories that the demologists have concern. The Hofacker Sadler law has been already mentioned. Popular belief associates the sex of the child with that of the less vigorous parent. "Such a theory", says Dr. P. C. Mitchell "as it would appear to imply the existence of a natural law for rectifying the proportions of the sexes has gained more attention than the facts supporting it would justify, and several unbiassed observers have interpreted the events in the sense that the vigorous parent produces his or her own sex." The influence of race and of locality, sea-coast or hillside, drybelts or moist lands, (urban or rural areas) has been also dealt with in Part I. Apart from these factors, a great deal of thought also has been devoted to the investigation of the question whether nutrition is of importance as a sex determinant. A large number of naturalists (E. Yung, Maupas, Mrs. Treat and others) experimenting with vertibrates have found a high correlation to exist between abundant nutrition and excessive production of females. Here also the influence of climate is emphasised. Vital statistics as given year by year since 1891 in Subsidiary Table V do not indicate however any direct relation in the variations of the sex ratio at birth with years of plenty or of famine. As to the other theories, in nearly every case, other observers have found contradictory results. The truth is probably as Darwin says that the proportions of the sexes are the resultant of natural selection by which an inherited tendency to produce female or male offspring is adjusted to the needs of the species. Such adjustments may be brought about in countless ways wherein all these factors may each or conjointly operate. Over these factors, operating, sometimes weakly, is the element of human will, as the outcome of which sex becomes a system of alternate rhythms such as Patrick Geddes and J. A. Thompson speak of, "of anabolism and katabolism to be observed throughout the living world," the female principle being specially associated with the anabolic or constructive processes, and the male the outcome of katabolic or destructive processes.

250 Influence of Duration of Marriage on size of Family—Sex Table VII is prepared from both continuing and completed fertility slips. The total of these is altogether 131,235. The cases of continuing marriage number 103,174 with 370,090 births, *i.e.*, an average of 3·6 children per marriage. The margin gives the summary figures.

Duration of present marriage in years	Number of marriages	Average number of children born alive per 100 marriages
Under 10 years	22,053	145
10 years	8,837	263
Between 10 and 20 years ..	47,532	359
Between 20 and 32 years ..	36,920	500
32 years and above	24,730	528

The statement gives the duration in year-groups. If we take instead the mean duration of marriage at each group, the averages may be assumed to be also equally true of them. Thus at five years, the children average 145 per 100 marriages or 29 per year; at ten complete years, 263, *i.e.*, an addition of 5 years brings an increase of 118 children. The addition to 100 families caused by the third five years of marriage life is only 96. When the marriage has lasted 26 years, the further addition in this riper period of eleven years is only 141 or 13 per year. Thus these rates of increase to the size of the family continue to diminish as the duration of marriage becomes longer and longer. They are relatively large in the early years, and fall as the duration increases. The Scottish experience, as explained by Dr. Dunlop, is somewhat different and is of course influenced by the age at marriage. There the increases are by no means uniform. A rise is followed by a fall and then a rise again in the longest durations. There is thus an indication of something like a rhythm in fertility and the facts explain also the phenomenon fairly commonly observed of a revival of fertility before the menopause. In this State, the effect of early marriage and premature motherhood is seen in a continuous and, at later periods of married life, a serious decay in fertility.

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251. Ratio of Survival: nature of the question asked—Having considered various questions connected with the fertility of marriage we shall now see how many of the total children born to a marriage usually survive. The question asked regarding this matter was simply how many of the children born alive were existing at the time of the enquiry. A more accurate method would have been of course to ask whether a child born alive had survived upto say 5 or ten years. In that way the special correlation between survival and the degree of fertility could have been isolated from the general incidence of mortality. But as it is notorious that all responses in a census enquiry vary inversely as the complexity of the question asked, it was feared that such a refinement as mentioned above would have proved too much for the people. In any case the figures compiled in the present enquiry do help in a very general way in the forming of certain important conclusions. The problem is no doubt important. From the point of view of social welfare, it is the size, not of the total, but the survived family that matters. Taking the cases of completed marriage, the mean duration is 32·9 years, so that the average age of the children living must be well within the period of healthy manhood and we can therefore afford to neglect the incidence of ordinary mortality and consider the survival to be generally the result of fertility without any large risk of error. In Sex Tables III, IV, V and VI, the question of survival is treated in various ways. We may at once dismiss the idea that caste or occupation in this State has any measurable influence independent of any other factors in regulating survival. The proportions are so "arbitrary" that we cannot take them to point to any very intelligible conclusions. In para 246, it has been already pointed out that occupation fertilities do not shed much light. Taking the figures, such as they are, three broad conclusions are indicated.

252. Correlation between survival of children and size of Families.—First there seems to be some inverse correlation between survival of children and size of families. Mr. C. E. Pell, the latest authority, in his interesting book, *The Law of Births and Deaths*, after reviewing the facts of vegetable kingdom and as manifested in human society by such phenomena as the correlation of births and deaths has enunciated the following proposition : "The net result of the variation of the degree of fertility under the direct action of the environment will bear an inverse proportion to the variations of the capacity for survival". Mr. Pell does not think that the evidences of birth control through the use of mechanical contraceptives are so numerous or general as to warrant the conclusion that it is the chief factor in the decline of birth-rate: he holds therefore that this decline is due mainly to a natural law connected with the varying degree of nervous energy used which adjusts the degree of fertility to suit the death-rate of the race. From these conclusions he proceeds to advocate a scheme of social welfare, whereby the birthrate could be regulated and organised through radical changes in social habits and diet and even through the transformation of the natural properties of water and soil presumably by widespread social effort, so that the ablest sections of the community may be encouraged by "economic guarantees" to have the largest families and the most unfit may be restricted to as few children as possible. As to the merits of Mr. Pell's proposals, no opinion is offered. The province of this Report is not to propagate any new evangel, but the much humbler one of studying social phenomena, and in that connection, it will suffice to observe that the facts compiled in our enquiry do to some extent support the hypothesis that the survival of families is largely determined by their size. Large families do seem to die out sooner than smaller families*. In the margin the orders according to the total size of families and the proportion of children surviving are compared per head of occupation. It seems that the inverse relation is generally established. Taking the figures by castes also we find that this inverse relation broadly subsists. But here the exceptions feature more largely than if the same slips are sorted occupationally. In the margin, the two orders are

Occupation	Order according to	
	Average size of family	Proportion of children surviving to total born
Transport	1	9
Public Administration (mostly clerks)	2	10
Domestic service	3	11
Trade	4	5
General labourers, etc. ..	5	4
Agriculture	6	3
Public Force	7	1
Industry (Artisans, surveyors, etc.)	8	6
Unproductive	9	2
Learned Professions (mostly religious.)	10	8
Persons living on their income.	11	7

* It appears from Mr. Pell's book that he did not investigate this special aspect of the problem. He was concerned only with social statistics regarding birth and death-rates.

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compared with reference to sixteen castes and communities (including Musalmans and Parsis) from which representative samples have been received. The average size of families ranges from 6·11 to 4·78. The proportion of survival ranges from 811 to 513 per thousand born. The exceptions to the rule are castes which show a high degree of fertility and a high ratio of survival such as the forest tribes, the Vaghris, Musalmans, etc. These are the stocks from which it may be imagined, the population is being replenished. On the other hand the more intellectual groups like Brahmans and Vanias have not only a low rate of fertility but also a very low proportion of survival. The physically sturdier castes like Rajputs, Kolis and Kanbis have rather a low-sized family, but happily the proportion of survivors amongst their children is larger.

Name of caste	Order according to	
	Average size of family	Proportion of children surviving to total born
Vohora	1	9
Forest Tribes ..	2	2
Vaghri	3	3
Jain Vania	4	13
Other Musalman ..	5	7
Dhed	6	6
Kumbhar	7	10
Brahman	8	15
Luhar	9	12
Kanbi	10	3
Sutar	11	16
Rajput	12	8
Vania Hindu ..	13	14
Hajam	14	11
Koli	15	5
Rabari	16	4
Parsi	17	1

253. Correlation between the Age at marriage and survival—The second conclusion to which the figures point is that the age of wife at marriage does influence to some extent the proportion of children that survive. In the margin a small statement prepared from Sex Table V is given. The mean size of the completed family is as we know 5·28, and the mean ratio of survival is 592. As the table shows, the higher the age of the wife at marriage the higher is the ratio of survival, so much so that while the mean size of the "survived" family is 3·12, there is no indication that this average has any risk of being lowered, even if the marriage is postponed from 13 to 30: whereas if the marriage age is raised to twenty or seventeen not only the rate of fertility is increased as we have seen but the size of the survived family also rises from 3·08 to 3·30, or in other words, there are 220 additional children per 1000 marriages saved for the race by this means.

Age of wife at marriage	Average size of family (completed marriage)	Proportion of children surviving to 1000 born
All ages ..	5·28	592
13—15	5·24	589
15—20	5·54	596
20—25	5·40	609
25—30	4·97	626
30 and over ..	3·72	600

The difference between the ages of the couples at marriage also appears to have some influence. We have seen that parity of age raises fertility, as disparity does the reverse. Similarly, but even more strongly does disparity lower the proportion of survival. The highest proportion of survival is when the husband and wife are both in the age-group 20-30. It is in this age group also that we see the size of the "survived" family to be the largest. The mean size of the survived family being only 3·12, it rises to 3·41 when marriage is postponed on both sides to the ages between 20 and 30.

Proportion of children surviving to 1000 born with		
Father married at	Mother married at	
	13—20	20—30
13—20	607	....
20—30	589	629
30 and over ..	566	628

254. Ratio of Survival in the City—The ratio of survival for the City which is obtained from the compilation register of Sex Table V shows how not only the total family, but also the "survived" family is small compared to the State. In the marginal statement the size of the family actually surviving is compared in the City and the State. The cases of women being married at 30 and over are so few that they have been neglected. We see that in the City families are always of much lower size than in the State at whatever age the woman marries.

Age of wife at marriage	Size of survived family in	
	State	City
All ages ..	3·12	2·41
13—14	3·08	2·43
15—19	3·30	2·52
20—25	3·29	2·29
25—30	3·11	1·7

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255. Proportion of Fertile and Sterile Marriages—Sex Table VIII has been prepared from slips of continuing marriages only, *i.e.*, where the fertile period is not completed. The marginal statement has been prepared from that Table. In all marriages, there are 186 "sterile" to 100 fertile when the duration is only 5 years: in other words in the first five years, whatever the age at which the woman may have been married, 65 per cent. of marriages are childless. If this enquiry is taken as sufficiently representative, 83 per cent. of the marriages in the State are contracted when the wife is at 13 or 14 or below. If therefore these early marriages are excluded, the proportion of sterile to 100 fertile marriages in the first five years of marriage is reduced to only 108, showing that sterility in these early marriages means only postponement of effective marriage (consummation) to a later age which is usually fifteen. That is the only form of birth-control that is operating to any appreciable extent in the State. In the marriages of longer duration than 5 years, the proportion of sterility is very slight, showing the true extent to which decaying fertility—as apart from artificial limitation—is the cause of the childless families. We have already seen how as the marriage lasts longer, there is in this country a rapid decay in fertility shown in the diminishing rates of increase to the size of the family.

Age of wife at marriage	Proportion of sterile marriages to 100 fertile with marriage lasting			
	0—5 years	5—10 years	10—15 years	15 years and over
All ages	186	18	4·1	2·6
13—15	240	19	4·2	2·6
15—20	134	12	3·7	2·3
20—25	54	8	2·8	3·7
25—30	38	6	7·2	5·1

256. Evidences of Birth-Control—Apart from the means above mentioned which is due in the great majority of cases to parental control on both sides, there is little evidence of the actual use of any of the mechanical or chemical contraceptives that are well-known in Europe. The Parsis are an exception, and I am assured by Parsi doctors whom I have consulted that conscious birth-control for the restriction of legitimate families is well-known amongst them. Certain sections of Hindu or Musalman castes, who have come under European influence or have travelled extensively to South Africa or Europe, know of the uses of these "rubber-goods" and have even adopted them in their homes. Certain chemists and "Europe shop" keepers in the City, or towns like Navsari, Mehsana, Patan or even Kadi are known to stock these goods and number amongst their *clientele*, besides Europeans and Parsis, Anavalas, Vohoras and even Vanias and Kanbis. But their numbers are so few that their practices cannot be said to be in any way likely to affect the birth rate. A larger number go in for the restriction of marital intercourse to the so called "sterile week," *i.e.*, to those periods between menstruation when conception is least likely. But the general attitude of the Hindu wife is usually one of horror at the idea of any human interference with what is regarded as a divine dispensation, so that the menfolk, even though they are cognisant of these practices, do not use them for legitimate purposes but reserve them for vice.

Apart from European contraceptives—which are expensive and not usually available to the average folk—evidences are not wanting, *e.g.*, in Ayurveda and Hakimi texts, that show that the desire to prevent conception is well-known in India from very early times. The Ayurveda* mentions that the use of pepper, borax and *vidanga* (a vegetable substance used as a vermifuge) ground into powder and taken with old *gur* (molasses) after menses has the effect of destroying fertility. Other substances are also mentioned: *amlaki* (emblic myrobalan), *arjan* (dillenia speciosa) and *haritaki* (myrabolan) ground and made into a paste and taken with water after menses, etc. The use of abortifacients and vesicants—such as the *raktchitamul*—is mentioned by Dr. Watts in his *Dictionary of Economic Products in India*. "Taken internally (in small doses) it is an acrid stimulant and in large doses acts as an acronarcotic poison in which character it is said to be not infrequently employed in Bengal. It is also taken internally for the purpose of procuring abortion... In Southern India, the dried comparatively inert root is in high repute as a cure for syphilis and leprosy." Hakim Masihar Rahman Qureishi in his text book on

* Some of these facts are taken from a Bengali book—*Kanya dayer Pratikara*—written by a Bengali doctor—which has within 6 years passed into seven editions. This wide circulation is proof of the increasing interest taken in the subject.

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Hakimi products mentions the use of the seeds of Kuchlata (abrus precatorius) as a preventive of conception. Dr. Watts also refers to it: " Taken internally by women, the seeds of Abrus precatorius disturb the uterine functions and prevent conception." There are also devices for the destruction of a man's virility. Vatsayana's Kamasutra (Book VII—Chapter II) mentions some: if a woman smears her sexual organ with the powder of *somalata* (ruta graveolens) *avalgiya* (bapchi seeds), *bhringa* (eclipta prostrata) *loha* (reduced iron), *upajihvika* (white ant)—and this decoction is thickened by adding the juice of *Vyadhighatake* leaves (cathartocarpus fistula) and *jambuphal* (eugenia Jambulana), a man attempting sexual intercourse with her in that condition will immediately lose his virility. In this connection the power of *gopalika* and white ants mixed with the curd of a she-buffalo is also mentioned.*

But these are devices either to destroy fertility or virility altogether or in part, or to abort and expel the fœtus. No indigenous mechanical contrivances to prevent germination during intercourse seem to be known in India†. Amongst the dancing girls in India, it is said, the practice of using what they call the *meloya* oil is not infrequently resorted to. The composition of this oil seems to be carefully guarded as a trade secret but that it has powerful germicidal properties has been testified to by many doctors. The oil is used in a small sized sponge, which is inserted after intercourse. It acts powerfully as a preventive of venereal infection and is also operative as destroyer of germ cells.

The use of *palas papda* (seeds of the palas tree whose flowers are known as the flame of the forest) and *amlaki* (myrobalan) is another favourite method with Indian *Vaids*. Either of these may be used. The seeds are ground into a paste and applied to the mouth of the womb, so that it contracts and the mucus is expelled. In this way sexual intercourse does not result in conception.

These methods, it must be remembered, are more largely used in the case of widows or unmarried women who have strayed from virtue than with a view to the restriction of families in married life.

257. Conclusion—In bringing these remarks to a close, the reader is reminded that the statistics regarding sex and fertility are so novel in this country that the conclusions drawn therefrom can only be largely hypothetical. The data of our present enquiry are offered to the student as the results of a pioneer undertaking. To ascertain social facts of sex and marriage with any exactness would require, as Mr. Pell says, "observations of unheard of delicacy—observations carried out with a nicety and thoroughness, which would have brought a warm red blush to the cheek of Peeping Tom himself." Even in Europe, with all their facilities, statisticians find any theorising based on sex-data perilous in the extreme. The inferences that have been drawn in the present enquiry cannot therefore be accepted but with extreme reserve. Some are however familiar to the reader: for instance it is well known that disparity in the age of husband and wife has a marked effect on fertility. The facts disclosed in the present enquiry bring statistical support to these generalisations and it is in that sense, if not in any other, that I claim success—although only a partial one—for our work.

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* From Vatsayana's *Kamasutra* p. 235 (Rangaswami Iyengar's translation).

† The *Kamasutra* which belongs to a highly artificial period of Indian history mentions many mechanical instruments for perverse sexual practices, but it is curious that it does not mention—so far as my knowledge goes—any devices for prevention of conception.

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SEX TABLE I.—Sex of first born

Natural Division	Number of females first born	Percentage of such families where female children predominate	Number of males first born	Percentage of such families where male children predominate	Number of females first born per 1,000 males first born	Number of slips examined
1	2	3	4	5	6	7
Baroda State	**11,375**	**49·336**	**15,836**	**63·709**	**718**	**28,061**
Baroda City	629	46·581	886	61·173	709	1,631
Baroda Division	3,378	47·725	4,972	64·400	679	8,650
Kadi Division	4,318	48·981	5,946	65·455	726	10,545
Navsari Division ..	1,662	52·166	2,087	62·290	796	3,798
Amreli Division	1,150	52·347	1,566	58·301	734	2,801
Okhamandal Division ..	238	51·680	379	63·324	627	636

SEX TABLE II.—Size and Sex Constitution of Families

Size of Family (Number of children born to a marriage)	Compiled from completed marriages only					Remarks
	Number of Families	Sex		Number of female children per 1,000 males	Percentage of families to total	
		Male	Female			
1	2	3	4	5	6	7
No children	850	....	....	....	3·1	
One child	1,435	866	569	657	5·1	
Two children	2,202	2,446	1,958	800	7·8	
Three children	2,893	4,904	3,775	770	10·3	
Four children	3,873	8,581	6,911	805	13·8	
Five children	4,179	11,282	9,613	852	14·9	
Six children	3,793	11,956	10,802	903	13·5	
Seven children	3,186	11,737	10,565	900	11·4	
Eight children	2,322	9,824	8,752	891	8·3	
Nine children	1,571	7,249	6,890	950	5·6	
Ten children	855	4,478	4,072	909	3·	
Eleven children	423	2,500	2,153	861	1·5	
Twelve children ..	262	1,668	1,476	885	·9	
Thirteen children ..	96	657	591	899	·3	
Fourteen children.. ..	65	483	427	884	·2	
Fifteen children	33	267	228	854	·1	
Sixteen children ..	12	110	82	745	·04	
Seventeen children ..	3	29	22	759	·01	
Eighteen children ..	4	44	28	636	·01	
Nineteen children ..	1	6	13	2,167	·004	
Twenty children	2	17	23	1,353	·008	
Twenty-one children ..	1	11	10	909	·004	
Total	**28,061**	**79,115**	**68,960**	**872**	**100**	

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SEX TABLE III.—Size of Families by Occupation of Husband

Occupation of Husband	Number of Families examined	Total number of children born	Average per family	Number of children surviving	Proportion of surviving to total thousand born
1	2	3	4	5	6
I.—Exploitation of animals and vegetation	**17,346**	**90,998**	**5·25**	**54,942**	**604**
1. Income from rent of land ..	63	333	5·29	192	577
2. Cultivators of all kinds	15,933	83,908	5·25	50,762	605
3. Agents, managers of landed estates, rent collectors, etc.	52	253	4·87	130	514
4. Field labourers, wood cutters, etc.	625	3,005	4·81	1,703	567
5. Raisers of Live stock, milkmen and herdsmen.	673	3,499	5·20	2,155	616
III.—Industry	**2,802**	**14,504**	**5·18**	**8,308**	**573**
1. Artisans and other workmen ..	2,762	14,306	5·18	8,190	572
2. Sweepers and Scavengers ..	40	198	4·95	118	596
IV.—Transport	**94**	**596**	**6·34**	**317**	**532**
1. Sailors	11	57	5·18	36	632
2. Palkhi bearers, etc.	83	539	6·49	281	522
V.—Trade	**2,166**	**12,008**	**5·54**	**6,943**	**578**
VI.—Public Force others	**5**	**26**	**5·20**	**19**	**730**
VII.—Public Administration ..	**348**	**1,996**	**5·74**	**1,032**	**517**
VIII.—Professions and liberal Arts	**1,048**	**5,101**	**4·87**	**27,83**	**546**
1. Religious	888	4,226	4·76	2,299	544
2. Lawyers, Doctors, Teachers ..	98	513	5·23	282	550
3. Others	62	362	5·84	202	558
IX.—Persons living on their income	**445**	**2,145**	**4·82**	**1,222**	**570**
X.—Domestic Service	**249**	**1,412**	**5·67**	**689**	**488**
XI.—Insufficiently described Occupations	**3,500**	**19,002**	**5·43**	**11,191**	**589**
1. Contractors, clerks, cashiers, etc. otherwise unspecified ..	1,032	4,735	4·59	2,530	534
2. Labourers unspecified	2,468	14,267	5·78	8,661	601
XII.—Unproductive	**58**	**287**	**4·95**	**166**	**648**
1. Beggars, prostitutes, criminals, Inmates of Jails and Asylums.	56	271	4·84	154	568
2. Occupation unspecified ..	2	16	8·0	12	750
Total	**28,061**	**148,075**	**5·28**	**87,612**	**592**

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SEX TABLE IV.—SIZE OF FAMILIES BY CASTE OR RELIGION OF FAMILY

Caste or Religion	Number of Families examined	Total number of children born	Average per family	Number of children surviving	Proportion of surviving to thousand born	Number of families with wife married at			
						13–14	15–19	20–30	30 and over
1	2	3	4	5	6	7	8	9	10
Total ..	**28,061**	**148,075**	**5·28**	**87,612**	**592**	**22,465**	**3,477**	**2,076**	**43**
HINDU AND JAIN									
1. Bhangi	199	1,040	5·23	594	571	160	23	15	1
2. Bharwad	123	700	5·69	393	561	80	27	14	2
3. Brahmin	2,230	11,731	5·26	6,209	529	1,962	163	104	1
4. Brahmabhat ..	192	891	4·64	510	572	146	33	13	..
5. Darji	221	1,059	4·79	443	513	173	27	21	..
6. Dhed	1,390	7,439	5·35	4,358	586	1,044	201	142	3
7. Garoda	76	387	5·09	210	544	70	4	2	..
8. Ghanchi	218	1,188	5·45	687	578	172	31	15	..
9. Hajam	374	1,868	4·99	1,029	551	303	47	24	..
10. Kachhia	130	520	4·00	319	613	125	3	2	..
11. Kanbi	7,261	38,093	5·25	23,597	619	6,274	628	353	6
12. Koli	3,884	19,170	4·94	11,449	597	3,040	552	283	9
13. Kumbhar	537	2,833	5·28	1,609	568	410	97	30	..
14. Luhar	278	1,459	5·25	803	550	220	38	19	1
15. Maratha	86	386	4·49	204	528	66	16	4	..
16. Prabhu	44	268	6·09	128	478	41	..	3	..
17. Ravalia	232	1,149	4·78	681	593	176	26	28	2
18. Rajput	1,025	5,278	5·15	3,026	573	780	181	63	1
19. Rabari	707	3,394	4·80	2,240	660	437	140	129	1
20. Sathawara	47	245	5·24	119	485	33	12	2	..
21. Sutar	363	1,897	5·22	975	513	301	41	21	..
22. Targala	69	411	5·95	238	579	56	8	5	..
23. Vaghari	373	2,192	5·87	1,359	619	292	51	29	1
24. Vagher	92	474	5·15	299	630	41	21	30	..
25. Vania (Hindu) ..	1,186	6,018	5·07	3,191	530	1,038	111	37	..
26. Vania (Jain) ..	318	1,773	5·57	968	545	268	43	7	..
27. Hindu (others) ..	3,221	17,597	5·46	10,664	606	2,560	393	258	10
ANIMIST									
28. Bhil	394	2,145	5·44	1,260	587	333	40	19	2
29. Chodhra	254	1,781	7·01	1,100	617	103	64	87	..
30. Dubla	487	2,961	6·08	1,907	644	429	40	18	..
31. Gamit	293	1,825	6·23	1,203	659	87	99	106	1
MUSALMAN									
32. Memon	122	853	6·99	499	573	58	43	21	..
33. Momna	91	481	5·29	346	719	68	16	7	..
34. Pathan	43	235	5·47	130	553	28	13	2	..
35. Saiyad	32	177	5·53	99	559	21	8	3	..
36. Shaikh	77	343	4·45	214	623	56	11	10	..
37. Vohora	260	1,589	6·11	910	572	183	39	38	..
38. Musalman (others) ..	1,026	5,595	5·45	3,138	568	787	157	81	1
39. INDIAN CHRISTIAN ..	26	154	5·92	90	584	21	3	2	..
40. PARSI	80	382	4·78	310	811	23	27	29	1

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SEX TABLE V.—Average size of Family correlated with age of wife at Marriage

Age of wife at marriage	Number of families	Number of children born	Average observed	Number of children surviving	Average observed
1	2	3	4	5	6
Total	**28,061**	**148,075**	**5·28**	**87,612**	**3·12**
13–14	22,465	117,643	5·24	69,298	3·08
15—19	3,477	19,255	5·54	11,473	3·30
20—25	1,637	8,835	5·40	5,380	3·29
25—30	439	2,182	4·97	1,365	3·11
30 and over	43	160	3·72	96	2·23

SEX TABLE VI.—Age of Husband at last marriage

Age of wife at last marriage		Age of Husband at Marriage														
		13–19			20–29			30–49			50			Dead*		
Age Periods	Number of wives	Number of husbands	Number of children		Number of husbands	Number of children		Number of husbands	Number of children		Number of husbands	Number of children		Number of husbands	Number of children	
			Born	Surviving		Born	Surviving		Born	Surviving		Born	Surviving		Born	Surviving
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Total ..	**28,061**	**14,148**	**75,481**	**45,848**	**8,667**	**46,973**	**27,878**	**1,546**	**8,120**	**4,822**	**25**	**109**	**68**	**3,675**	**17,392**	**8,996**
13	21,877	13,151	69,747	42,399	5,354	28,543	16,644	568	3,026	1,684	9	36	30	2,795	12,941	6,641
14	588	340	1,928	1,104	133	815	469	23	139	66	..	..	..	92	468	241
15–19 ..	3,477	640	3,738	2,303	2,131	11,941	7,192	252	1,302	771	4	16	6	450	2,258	1,201
20–24 ..	1,637	15	62	39	951	5,178	3,257	413	2,229	1,368	3	21	11	255	1,345	705
25–29 ..	439	2	6	3	94	483	307	267	1,346	884	6	24	11	70	323	160
30	43	..	..	..	4	13	9	23	78	49	3	12	10	13	57	28

* These cases are presumably of husbands who have died after their wives have completed 45 years of age.

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SEX TABLE VII.—DURATION OF MARRIAGE CORRELATED WITH CASTE OR RELIGION OF FAMILY

Caste or Religion of Husband	Duration of marriage with the present wife								
	Under 10 years			10 years			Between 10–19		
	Number of Families	Number of Children	Average number of children	Number of Families	Number of Children	Average number of children	Number of Families	Number of Children	Average number of children
1	2	3	4	5	6	7	8	9	10
Total ..	**22,053**	**31,934**	**1·45**	**3,347**	**8,837**	**2·63**	**47,532**	**171,029**	**3·59**
Brahman	2,204	2,676	1·21	208	537	2·58	3,615	12,777	3·53
Dhed	1,153	1,720	1·49	147	385	2·62	2,484	8,789	3·53
Kanbi	4,538	6,923	1·53	763	1,929	2·53	11,316	40,106	3·54
Koli	2,730	4,059	1·49	456	1,222	2·67	6,754	24,085	3·56
Rajput	828	1,059	1·28	129	355	2·75	1,823	6,667	3·65
Vania	1,305	1,716	1·31	156	410	2·63	2,119	7,631	3·60
Other Hindu	6,231	8,907	1·43	915	2,462	2·69	13,212	47,680	3·60
Jain	249	318	1·28	39	101	2·59	387	1,423	3·67
Musalman	1,475	2,184	1·48	236	628	2·66	2,636	9,510	3·60
Parsi	54	96	1·78	3	8	2·66	55	232	4·21
Animist	1,272	2,255	1·78	292	794	2·71	3,110	12,050	3·87
Indian Christian	14	21	1·50	3	6	2·00	21	79	3·76

Caste or Religion of Husband	Duration of marriage with the present wife.								
	20–31			32			33 and over		
	Number of Families	Number of Children	Average number of children	Number of Families	Number of Children	Average number of children	Number of Families	Number of Children	Average number of children
1	11	12	13	14	15	16	17	18	19
Total ..	**36,920**	**184,608**	**5·00**	**9,218**	**47,896**	**5·20**	**15,512**	**82,698**	**5·34**
Brahman	2,527	12,736	5·04	833	4,247	5·10	1,218	6,528	5·36
Dhed	1,883	9,322	4·95	434	2,283	5·26	762	4,080	5·35
Kanbi	8,729	43,204	4·95	2,469	13,012	5·27	4,177	22,017	5·27
Koli	5,629	26,769	4·75	1,235	5,943	4·81	2,093	10,476	5·01
Rajput	1,213	5,953	4·91	352	1,778	5·05	547	2,831	5·18
Vania	1,443	7,363	5·10	420	2,106	5·01	678	3,448	5·09
Other Hindu	10,195	50,832	4·99	2,523	13,050	5·17	4,080	21,914	5·39
Jain	340	1,783	5·24	110	606	5·51	168	933	5·55
Musalman	2,111	10,560	5·0	484	2,657	5·49	924	5,318	5·76
Parsi	61	287	4·70	7	43	6·14	51	246	4·82
Animist	2,777	15,733	5·67	342	2,124	6·21	803	4,828	6·01
Indian Christian	12	66	5·5	9	47	5·22	11	79	7·18

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SEX TABLE VIII.—PROPORTION OF FERTILE AND STERILE MARRIAGES

Age of wife at Marriage.	Duration of Marriage Years							
	0–4		5–9		10–14		15 and over	
	Fertile	Sterile	Fertile	Sterile	Fertile	Sterile	Fertile	Sterile
1	2	3	4	5	6	7	8	9
Total ..	**1,968**	**3,651**	**13,975**	**2,459**	**20,373**	**837**	**58,419**	**1,492**
13–14	1,158	2,775	11,814	2,226	16,721	702	49,765	1,279
15–19	568	762	1,685	197	2,813	103	7,120	164
20–24	160	86	370	29	648	18	1,392	51
25–29	58	22	79	5	166	12	137	7
30 and over	24	6	27	2	25	2	5	....

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CHAPTER VII

CIVIL CONDITION

STATISTICAL DATA

Subject	TABLES		
	Imperial	State	Subsidiary
Civil condition by Divisions	VII	..	..
" " " Talukas	..	VI	..
" " " Towns	..	VII	..
" " " Selected Castes, Tribes and Races	XIV	..	..
Distribution by civil condition of 1,000 of each Sex, Religion and main Age period at each of the last five censuses	..	..	I
Distribution by civil condition of 1,000 of each Sex, at certain ages in each Religion and Natural Division	..	..	II
Distribution by main age periods and civil condition of 10,000 of each Sex and Religion	..	..	III
Proportion of the Sexes by civil condition at certain ages for Religions and natural divisions	..	..	IV
Distribution by civil condition of 1,000 of each Sex at certain ages for selected Castes	..	..	V

258. Reference to Statistics—Imperial Table VII gives the particulars of the civil condition of the population by religion and administrative division. In State Table VI detailed figures are given by Talukas. In State Table VII, the civil condition of the total urban population (and in selected towns) is shewn. Subsidiary Table V is prepared from Imperial Table XIV, all the other Subsidiary Tables being prepared from Imperial Table VII.

259. Scope of the Chapter—The chapter on civil condition in the Census Reports of 1911 contained a large amount of descriptive matter of considerable sociological interest but of little relevance to the statistics of marriage. On this occasion such subjects as peculiar marriage ceremonies, polygamy, hypergamy, endogamy and exogamy are presumed to be known, and the discussion will be primarily confined to an analysis of the statistics together with such aspects of general reference, which are connected with the figures, as influences explanatory of the variations. In that connection, the effect of the social legislation with which the name of this State has been particularly associated will be studied, as also such recent changes in the attitude of special communities towards early marriage, widowhood etc. as have been reported will be briefly referred to.

260. Meaning of the Figures—At the outset it is important to lay hold of the meaning of the figures from the point of view of the question asked by the enumerator and the validity of the answers given. The instructions regarding civil condition, issued to the enumerators both on the schedule and separately in a detailed book of instructions, were :

"Enter each person whether infant child or grown up as either *married*, *unmarried* or *widowed*. Divorced persons are to be shewn under widowed. Only those who are recognised to have gone through the full marriage ceremony, are to be entered as married : betrothed persons (with *vagdan*) or persons about whose marriage only the preliminaries are settled, *e.g.*, *vivah* or *sagai*, are to be treated as unmarried. Prostitutes and hermaphrodites are to be included among the unmarried. Unmarried women, even though they have children, should be treated as if they are not married. Kept women or concubines are to be shewn under their former civil condition. Widows who have taken a second husband by the rite known as *natra* should be treated as married."

The above instructions were full and precise, and there is no reason to suppose that they were misunderstood. The instructions regarding the test of marriage were based with a view to rule out cases of mock marriage, as when a girl is married to a bunch of flowers and then remarried as a "widow." Or again, as the custom requires that a bachelor cannot marry a widow, he is first married

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to a *shami* tree (*prosopis spicigera*). They were also intended to exclude such intermediate forms of *sambandh* as concubinage, which are not recognised publicly in Gujarat. The enumerators were enjoined to take down without cavil the statements of the people. They were however to explain to them that only those that have gone through the full binding portion of the ceremony were to be regarded as married. Such a binding portion amongst the higher Hindu castes in Gujarat is the ceremony of *saptapadi* which consists in the bridal pair walking seven times round the sacrificial fire. Its counterpart, equally binding, among the lower orders, is the so-called *mangalphero*. The valid part of marriage amongst forest tribes is the seating of the couple at the centre of the marriage-booth and the tying together of the hems of their festal garments into a knot, which is subsequently cut. As to remarriage of widows, the express provision about *natra*, which is a much abbreviated ceremony, indicated to the enumerators that it was to be regarded as a test of valid marriage. On the whole these instructions were strictly followed. Doubtful cases of infant marriage amongst higher castes or adult spinsterhood generally were locally inquired into at the slip-copying stage; and such errors as were found were rectified. There may have been also some deliberate falsification : as will be seen in Chapter X, women afflicted with some infirmity and who have remained spinsters on that account to a late age may have returned themselves as married. Prostitutes or kept women*, although not married, may desire to appear so. The operation of the Infant Marriage Act already referred to in Chapters V and VI may have possibly led to some falsification. Married girls below the age of 12 may have been shewn as unmarried ; but this is hardly likely : if any falsification was necessary, they could resort to the readier expedient of entering a wrong age. These cases at all events are very few and the general accuracy of the returns need not be doubted.

261. Main Features of the Statistics : (*a*) *Universality of Marriage*—The most prominent feature of statistics regarding civil condition is, as it has been always in India, the universality of marriage. To the European observer, it is the feature that strikes as the most significant contrast to the life of the West. But as the last India Census Report pointed out (para. 325) the universality of marriage is not a peculiarity with India, but amongst all primitive races, and it is not the European custom, but the Indian, which is the normal and the natural thing. "It is only in the artificial, social and economic conditions of the West that marriage has ceased to be regarded as inevitable, and that prudential and other considerations cause many to remain celibate. In all other parts of the world marriage is looked upon, not as a luxury, but as an absolute necessity for man and woman alike." Here in India, with the Hindus, this natural tendency is reinforced by social and religious sanctions of great antiquity. Religion in the West, as Risley pointed out, usually makes for celibacy, while in India it throws its weight almost wholly in favour of the married state. The Hindus, with whom marriage is a sacrament, forming as they do the predominant portion of the population, have affected profoundly the attitude and social practices of other religions. Musalmans, the bulk of whom are converts from Hinduism, have been affected to a varying extent by Hindu influences, and nowhere have these influences been so effective as on marriage-usage. Jains are dominated by Hindu influences in this regard : so far reforming activity amongst them has been able to effect very little change in their general attitude in regard to caste restriction in marriage and the remarriage of widows. Marriage amongst Animists is adult, and the remoter is a tribe from Hindu influences, the higher is its age of marriage. The Indian converts to Christianity have been little influenced so far as early marriage is concerned. The Parsis alone are an exception, but even they, until recent years, had succumbed to the pervading influence of Hindu social practices and amongst the orthodox sections, marriage is almost as largely prevalent as amongst any Hindu caste.

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*Going over the enumeration books of a certain town which has an evil repute for immorality, I was struck by the frankness with which apparently kept women returned their true condition as *rakheli* (kept), *gharman ghali* (Concubine) etc. The Indian Census Schedule does not require the information about the relation of the other members to the head of the household, as in England. If it had, doubtless there would have been great falsification of returns palticularly regarding civil condition, and some such euphemism as "boarder" or "lodger" for illegitimate children) would have been resorted to.

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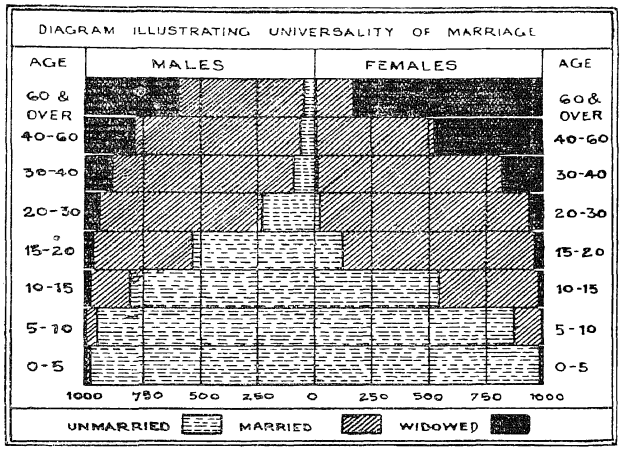
These general considerations apply with equal force to this State. Of the whole population, over 48 per cent. are married, 40 per cent. are unmarried and 12 per cent. widowed. By sex, the proportions are different. There are twice as many widows, as there are widowers, proportioned to a 1,000 of each sex. About half of males and one-third of females are unmarried. The accompanying diagram shows that the great majority of the unmarried of both sexes (particularly amongst females) are children up to 15 years of age. Above that age, the married state becomes the normal civil condition for women.

Civil Condition	Per 1,000	
	Male	Female
Unmarried ..	461	332
Married ..	455	501
Widowed ..	84	167



(b) *Early Marriage*—Another point in which the statistics of marriage offer a marked contrast to the state of things in Western Europe is the early age of marriage. M. Sundbärg's table* shows that of the population of Western Europe below the age of 20, only one male in 2,147, and one female in 142 were married. In this State, on the other hand, one male in five, and one female in four, are married before that age. The incidence of infant marriage will be more closely studied presently. In the meantime the contrast is only broadly stated.

(c) *The Large Proportion of Widows*—The third feature which marks off the civil condition figures of this country from the European statistics is the large proportion of the widows that they disclose. The proportion of the widowers is only 8 per cent. of the male population and does not differ greatly from that in other countries. But the proportion of widows is very large—no less than 17 per cent., while the average proportion of widows in western countries is only about 9 per cent. About one fourth of the widows of the State are below 40 years of age, against only 7 per cent. in Europe.

It has been said that Hindu marriage is a sacrament: logically therefore all Hindu women after they lose their husbands are forced to remain single throughout the rest of their lives. There is no such prohibition with Musalmans, Parsis, Animists and theoretically with Jains. But in practice, widowhood, particularly in adult ages is almost as prominent a feature amongst these communities as amongst Hindus. Amongst the latter, the sanction against the remarriage of widows is unknown to the earliest and the most sacred traditions of their religion, and even now only a small proportion of them—as estimated by Mr. Dalal†, 15 per cent.—strictly prohibit the remarriage of widows. But this minority consists of the influential groups like Brahmans, Kshatriyas and Vanias. Amongst those castes with whom widow remarriage is allowed, the socially superior sections make it a point to discourage the practice in order to raise themselves in the estimation of the *Dwijas*. The varying extent to which the lower castes have aped the higher in this matter will be studied later. In the meantime it will be sufficient to note that the large number of widows amongst Hindus of the child bearing ages is one of the factors that operate naturally against a high rate of

* Quoted in the India Report of 1911, para 327.
† *Vide* his Census Report for 1901, p. 491.

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increase. Although with the Hindus marriage is obligatory, it is yet hampered by numerous restrictions. The area of choice already limited by the restrictions of caste is further narrowed by the enforced widowhood of marriageable women. Thus adult widowers marry very young women, and the great disparity of age increases the period by which, on the average, the wife survives the husband, and there is thus a large number of child-widows, or widows below the age of 40 than in any other community except the Jains.

262. Variation by Religion: (*a*) *Hindu*—The figures given above are for the State as a whole. But they are far from uniform in the different religions and localities.

Taking the principal religions, the Hindu proportions ought not to differ much from the general proportions, as they form the great majority of the population. But even then there are amongst Hindus 11 fewer males unmarried, 8 more married and 3 more widowed, in every thousand, than in the general population. The proportion of unmarried females amongst Hindus is lower than in the general population. The larger number of married and widowed amongst them is due no doubt to their earlier age at marriage. The marginal table compares the proportion of unmarried at the ages 0-5 and 5-10 in the different religions. Except the Christian converts the Hindus show the lowest age at marriage. At the age period 10-15—*vide* Subsidiary Table II—49 per cent. of Hindu females are married as against 25, 18, 18, nil and 46 in the case of Musalmans, Animists, Jains, Parsis and Christians respectively. Only one out of 30 unmarried Hindu females is above the age of 15, as against one in 22 in the general female population.

Civil Condition by Religion per mille

Religion	Male			Female		
	Unmarried	Married	Widowed	Unmarried	Married	Widowed
Hindu	450	463	87	316	512	172
Musalman ..	486	437	77	358	471	171
Animist ..	546	396	58	470	448	82
Jain	516	393	91	319	411	270
Parsi	569	369	62	444	386	170
Christian ..	407	521	72	355	558	107
All Religions ..	461	455	84	332	501	167

Religion	Proportion of Unmarried per mille			
	Male		Female	
	0–5	5–10	0–5	5–10
All Religions ..	990	948	985	886
Hindu	989	941	982	872
Musalman ..	995	973	993	941
Animist	998	989	997	954
Jain	994	985	996	966
Parsi	1,000	1,000	1,000	998
Christian ..	982	824	937	627

(*b*) *Musalman*—The Musalman proportions differ but little from the above figures. The proportions of the unmarried in both sexes are much higher, but the figures relating to the widowed females are about the same. There is a singular correspondence as the margin shows in the age distribution of widows in the two religions. In the younger ages, particularly under 15, the Hindus show a larger number of child-widows: but the figures show that generally the prejudice against adult widow remarriage is almost as strong among Gujarat Musalmans as amongst their Hindu congeners. The young Musalman widow is remarried soon enough, but the older widow has still to fight against this sentiment. Coming to the civil condition of children, the differences in the two religions will be found to be the most striking. Under the age of five the proportion of married and widowed amongst Musalmans of both sexes is less than half of the corresponding figure of the Hindus. In the age period 5-10,

Distribution by age-periods of widows proportioned to 10,000 females

Age Periods	Hindu	Musalman
All ages ..	1,717	1,713
0–10	4	2
10–15	16	6
15–40	419	390
40 and over ..	1,278	1,315

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the same difference persists. In the age period 10-15 also, among males as well as females, the proportion of the Hindu married is more than double that of the Musalmans. In the child-bearing period (15-40), the proportions are about the same, the Musalman figures ruling a little lower. The proportion of widows among them is however much less.

(*c*) *Animist*—The Animist proportions show generally a higher ratio of the unmarried and a smaller figure for the widowed than the Musalmans. At ages 15-40 and 40 and over, the Animists show however fewer bachelors relatively to their total strength than the Musalmans. This circumstance is generally due to the fact that marriage is adult among them or at least those sections that are still untouched by Hindu influence, and that there is no difficulty for widows, or even wives, amongst them to find new partners.

(*d*) *Jain*—The Jains in their civil condition figures show about the same age of marriage as Animists. But, as they follow the practice of enforced widowhood which is particularly rife amongst the Vanias to which caste the bulk of Jains belong, the proportion of widows is the highest among them. Amongst their married males, one in 53 is below 15 years in age. The corresponding proportions amongst Hindus, Musalmans and Animists are respectively one in 13, one in 28 and one in 60. Amongst their married females, one in 17 is below 15. The corresponding proportions amongst Hindus, Musalmans and Animists are one in 7, one in 13 and one in 16 respectively.

(*e*) *Parsi*—As compared to the general population the Parsis have in a hundred males, eleven more unmarried, eight fewer married and three fewer widowed. Of a 100 females, there are 11 fewer spinsters, 11 more married and the same proportion of widows. Both males and females do not marry till after puberty. Only one male in 307 and one female in 771 among the married Parsis are below the age of 15.

(*f*) *Christian*—The Christians show the lowest age at marriage among all the religions. Of their married males one in eight and, of their married females, one in five are younger than 15. Taking the figures of Indian Christians separately no less than 16 males, and 62 females, of a thousand of each sex aged 0-5, are married. The corresponding figures for the State are 8 and 15. The majority of the converts are from such castes as Dheds and Chamars, but even these show as will be seen later higher ages at marriage. As pointed out in the Chapter on Religion, the Indian Christians have increased but slightly: the gain from conversions could not have been large within the decade, so that the bulk of the converts may be presumed to be of fairly long standing; it must be concluded therefore that missionary influence has been powerless in raising the marriage age.

The other religions do not call for much remark. Of the Aryas, 273 or 43 per cent are married. Only 5 males and 10 females amongst these are between the ages of 5 and 15. The married Sikhs, Jews and Brahmos are all above the age of 20.

263. Variation by locality—The above variations by religion help us to some extent to understand the variations in civil condition by locality. Generally it may be stated that the proportion of the married in both sexes is the highest in Central Gujarat and the lowest in Kathiawad. 50 per cent. of males are married in Baroda *Prant* without the City. In the City, the married males form 47 per cent. of the total male population. In North and South Gujarat the proportion of the married is 44 per cent., while in Kathiawad it is only 39. Amongst the females, the same order is observed; the proportions of the married in the natural divisions stated in the above order are 55, 49, 49, 49 and 44 respectively. Undoubtedly one of the contributory causes of these variations is the proportion of females to males. In a country where marriage is general, and almost the only factor that keeps a man away from marriage is the paucity of eligible females, the sex proportion in any given locality does affect largely the conditions of marriage. In Kathiawad among its natural population, the proportion of females is lowest in the State. Comparing the figures as in the margin, we find as expected Kathiawad with the lowest proportion of women has the largest proportion of bachelors. In South Gujarat, the higher age of marriage is the counteracting factor. In Central Gujarat, inspite of the low ratio of its females, the very early ages at marriage that obtain keep down the proportion of bachelors. Also the

Natural Division	Proportion of the unmarried males	Proportion of females to males in Natural population
Central Gujarat ..	420	882
North Gujarat ..	472	942
South Gujarat ..	486	982
Kathiawad	527	868

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proportion of marriageable women, *i.e.*, aged 10-20 is an important factor. In the marginal statement, Kathiawad has generally lower proportions than South and North Gujarat, but higher than the Central Division, in the age period 10-20. In regard to age period 5-10 however Kathiawad has a higher proportion of females than any other division. Its lower proportion of married therefore must be ascribed to the higher marriage age that obtains there. The question of early marriage will be presently taken up, but another factor must be mentioned: the proportion of widows. Where the proportion of widows is high, on account of the practice of enforced widowhood, there it may be imagined that the proportion of the married males will tend to be less, other things being equal. The margin shows however that the actual situation is complicated by other factors. Still the City which ordinarily partakes of the same social influences as the district around has a lower proportion of the married compared to the *prant* figure, because, among other causes, of its high proportion of widows. In North Gujarat and Kathiawad, the high proportion of the widows is one of the causes why fewer men are married. In Kathiawad, the high proportion of widows partly accounts for the proportion of its married males, which is the lowest in the State.

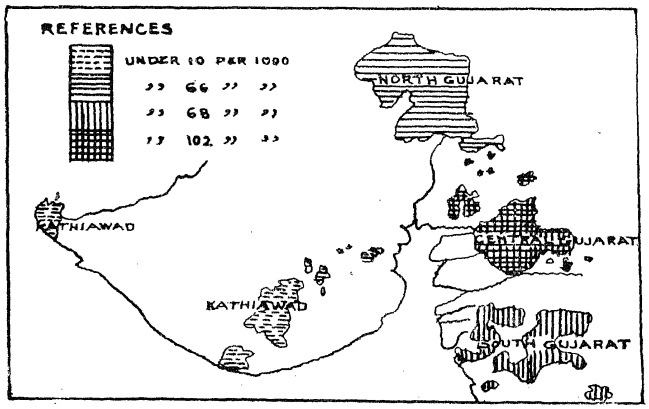
Natural Division	Proportion of females to males		
	5–10	10–15	15–20
Central Gujarat ..	860	874	775
North Gujarat ..	910	887	803
South Gujarat ..	922	949	1,013
Kathiawad	926	887	817

Natural Division	Per cent of	
	Married men	Widows
Central Gujarat ..	50	16
City	47	23
North Gujarat ..	44	18
South Gujarat ..	44	12
Kathiawad	39	16

The governing cause in all the divisions is therefore the age at marriage. Where this unites with the other factors, as in Kathiawad, the proportion of the unmarried is high. In South Gujarat, the practice of adult marriage contributes to the high proportion of its unmarried, although there is a sufficiency of females and remarriage of widows frequently happens.

264. Early Marriage by Locality—Of the causes enumerated in the above paragraph, early marriage is the chief. The map inserted in the margin shows the proportion of the married per 1,000 Hindu females aged 0-10 in the different divisions. The Hindus being the dominating element in all the divisions except South Gujarat, the proportion of married girls under 10 will enable the reader to see where the age of marriage is the lowest in the State. In South Gujarat, the Animists form 43 per cent. of the population, and they help to counteract the influence of Hinduism. The variations are striking. They range from over 10 per cent. in Central Gujarat to only one per cent. in Kathiawad.

MAP SHOWING THE NUMBER PER 1,000 HINDU FEMALES AGED 0-10 WHO ARE MARRIED



Taking only the age-period 0-5, in the State, 8 boys and 15 girls per 1,000 of each sex are married. In 1911, the figures for all India were a little lower than

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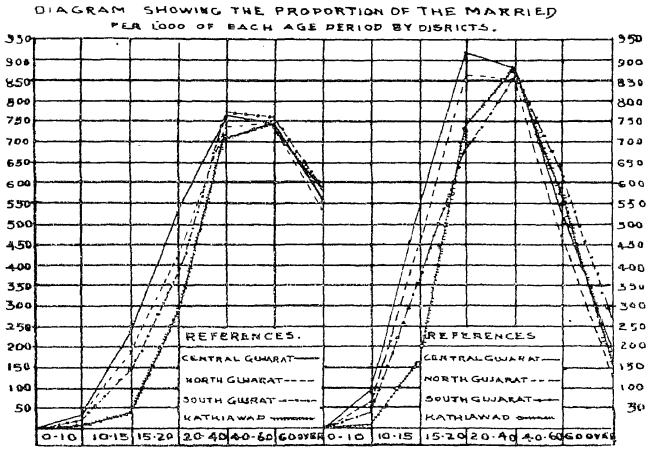
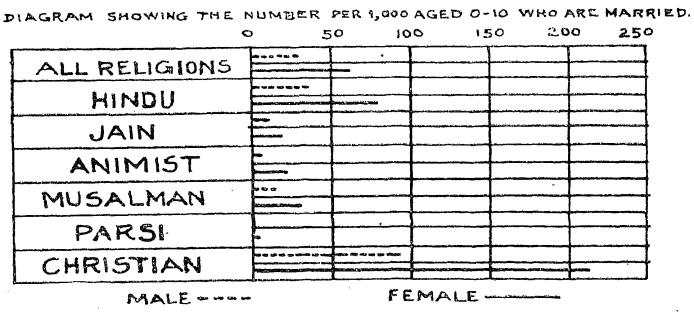
these. In the ages 5-10, the figures of married for each sex in the State are 50 and 112. In 1911 the corresponding figures for all India were 37 and 105.

Turning to the detailed figures by age in the different natural divisions, we may study the marginal statement. The diagram given below has been plotted on the detailed figures by age-groups, including those contained in the marginal table. Roughly six times as many boys and ten times as many girls, under ten years of age, are married relatively to the total population of each set under that age, in Central Gujarat,

Natural Division	Proportion of Married per 1,000					
	0–10		10–15		15–20	
	Male	Female	Male	Female	Male	Female
Central Gujarat ..	35	94	249	558	536	919
North Gujarat ..	35	62	189	457	420	862
South Gujarat ..	21	43	146	354	377	676
Kathiawad	6	9	44	154	280	792



as in Kathiawad. In the age-group 10-15, the respective proportions in Central Gujarat are six times for boys and nearly four times for girls. In the age-group 15-20 a little over half the boys and nearly all girls are married in Central Gujarat. In North Gujarat, the age of marriage seems to have gone up in this census a little higher. In South Gujarat, the proportion of girls married at this age is less but that of boys a little more, than in Kathiawad. Kathiawad from all these figures appears to have the least prevalence of early marriage. But on the other hand Kathiawad is notorious as a marriage mart, and the so-called sale of girls is rife in that place. Widowers or grown-up bachelors from the main land of Gujarat who can afford the money to buy out brides resort to this peninsula for their mates.



265. Early Marriage by Religion—The variations by religion have been already referred to and in that connection, the situation regarding early

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Religion	Number married per 1,000 aged 0–10	
	Male	Female
All Religion ..	30	64
Hindu	34	72
Jain	9	19
Animist ..	7	24
Musalman ..	16	33
Parsi	..	3
Christian ..	92	215

marriage has been also briefly studied in the different religions. A diagram is attached to indicate the varying attitude of the different religions towards this question. The proportional figures on which the above diagram is plotted are collected in the margin. Child marriage is practically non-existent among the Parsis. The fearful prevalence of child marriage amongst Christian converts has been already noted. As to the other religions, a detailed examination by social strata is required.

It is important to remember in connection with early marriage that in this country the age at marriage is no indication of the beginning of effective married life. In the vast majority of Hindu marriages, marriage is not usually followed by cohabitation. Within a few days after marriage, the Hindu bride, if she is of immature years is taken to her parental home and only sent back to her husband when she has attained puberty, *i.e.*, after menstruation. But if the husband is a widower and of maturer years, he may insist on his marital rights and often there happens premature consummation with all its woful *sequelæ* of permanent debilitation of health or even death to the wife. In the Sex Enquiry, discussed in the previous chapter, the effect of disparate marriages on the health of the wife was not the subject of investigation. But one knows how the child-bearing period especially in the earliest and the latest stages is particularly critical for the woman. Amongst Animists and Parsis, the marriage is adult and it is presumed that consummation is almost immediate. With the Musalmans, a passionate race, the age at marriage is only slightly higher than the Hindus, and if one were to believe reports, the interval between the dates of formal and effective marriage is not long.

266. Early Marriage by Caste—Subsidiary Table V gives the proportional figures regarding civil condition. In the margin are collected the proportions of children under 12 married in the representative castes. Two of the three main Kanbi castes are the greatest sinners in the matter of marrying their children before puberty. The Lewa Kanbis are only a little better. Golas, Ghanchis and Kumbhars—indeed all artisan castes even including Sonis and Bhavsars, although these latter have shown much progress in education—marry their daughters very early. Kolis are naturally inclined towards adult marriage but Hindu influence tends to lower the age at marriage. The same might be said of the forest tribes of whom the Hinduised Bhils and Dublas marry their children younger than their Animistic brethren. The Hindu castes showing low proportions of children married are more or less high. The Lewa Kanbis and Rajputs amongst these show the strongest tendency towards early marriage. Brahmans and Kayasthas on the other hand show the reverse. Amongst the Musalmans, those with foreign strain like Saiyads and Pathans show a more adult marriage age than local converts like Memons, Khojas or Vohoras.

Caste	Number per 1,000 married and widowed			
	Male		Female	
	0–5	5–12	0–5	5–12
A. HIGH FIGURES				
Anjana Kanbi ..	26	153	28	226
Kadwa Kanbi ..	34	121	63	216
Gola	30	376	14	526
Darji	20	103	27	201
Ghanchi	8	117	10	208
Kumbhar	13	151	19	238
Indian Christian ..	18	180	64	363
Rabari	18	131	29	216
Dhed	17	88	54	305
Chamar	17	135	15	203
Baria	15	105	16	250
Hajam	10	116	28	247
B. LOW FIGURES				
Memon	19	51	30	59
Deshastha	13	26	4	41
Jain Vania	6	19	3	69
Hindu Vania ..	2	22	4	50
Early tribes	4	15	5	24
Lewa Kanbi ..	9	76	18	193
Brahmabhat.. ..	5	28	32	108
Koli	9	51	9	123
Audich Brahman ..	3	28	14	104
Rajput	7	58	10	164
Vohora	7	63	11	104
Maratha Kshatriya ..	3	19	3	69
Musalman with Foreign Strain	2	18	8	52
Nagar Brahman ..	..	17	7	82
Anaval Brahman ..	..	25	10	64
Prabhu	..	8	..	4
Parsi	..	..	..	3

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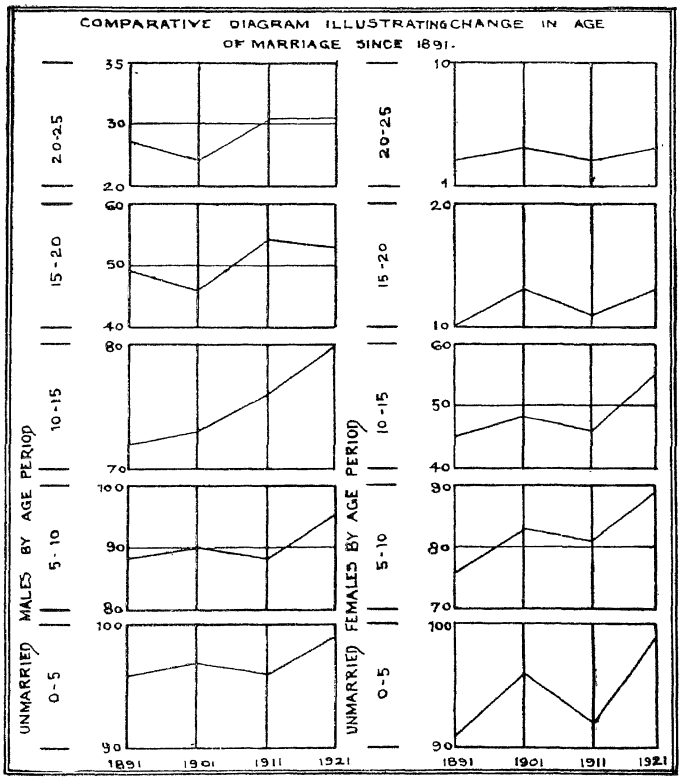
267. Early Marriage by Censuses—Turning to the figures of the previous censuses, we find that the revelations of the latest census are a great improvement so far as the attitude of the people towards this question is concerned. The mean age of the unmarried among males has risen from 11·3 in 1911 to 11·4 years in 1921 ; and among females from 6·3 to 7·1 years. The proportion of males married and widowed at 0-5 per mille was 43 in 1891, 27 in 1901, 41 in 1911 and only 10 in this census. The respective figures for females of that age group in the last four censuses are 93, 39, 85 and 15. The marginal figures show a very decided improvement. A comparative diagram is also given below which illustrates more vividly the great progress in social feeling and practices in this respect. The very sudden drop in 1921 cannot however be wholly ascribed to the progressive influences of social reform. The very high figures of early marriage in 1911 were chiefly because of the fact that in the decade 1901-10, there were two marriage seasons, in 1901 and 1910, of the Kadwa Kanbis. The peculiar social custom of this caste has been described in

Age group	Proportion of female unmarried per mille of the sex			
	1921	1911	1901	1891
10–15	547	464	477	446
15–20	132	111	127	103
20–40	14	11	16	14



detail in the last Report. Once in every nine, ten or eleven years, the Brahman astrologers go with the headmen of the caste to Umia Mata, their tutelary deity, (at Unjha in Sidhpur Taluka) and after worship, draw lots for the year of marriage. They then appoint a day when all the unmarried females of the caste are given in marriage. These periodic marriages were certainly a great saving in time and in money and so long as this ancient custom was accompanied by the absence of any prohibition of widow remarriage, no particular hardship resulted. I have found that amongst these Kadwa Kanbis although the formal age of mar-

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riage was so young, the age of effective marriage was, and is even now, much later than what obtains amongst some Brahman or Vania castes. Aspiration to rise in the estimation of their so-called *Dwija* neighbours brought on enforced widowhood amongst them, and the progress of education has also brought about a revulsion of feeling against what they considered an archaic and unnatural custom. These influences together with the fact that in the decade 1911-1920, there was only one season of marriage amongst them, have had this result that the proportion per mille of females married at 0-5 has been reduced from 625 in 1911 to only 32 in this census. Nearly two-thirds of the married children of these ages in 1911 belonged to this caste. But even if we leave the Kadwa Kanbis out of account, we see that the proportion per mille of male children aged 0-5 who are married has declined from 14 to 6 in the last ten years; and the respective ratios for female children aged 0-5 for the last two censuses are 31 and 10. There is therefore a real movement towards postponement of the age at marriage, but we shall now examine whether it is shared by all classes, high and low.

268. Factors in the postponement of Marriage: effect of Education on child marriage.—Among the factors in the postponement of marriage are the influences of education that have led to a humaner attitude towards women. But it is only in the higher castes where the educational influences are really operative that any real change as will appear from the margin has taken place in this respect. In the marginal statement certain castes are taken with whom infant marriage may be said to be largely prevalent. Amongst all these castes with one exception, literacy has largely increased. The largest proportional increases are among the Marathas, Bhavsars, Sonis, Sutars and Lewa Kanbis. The Anjanas show a decline in education and it is natural that the prevalence of child marriage should actually show an extension. The Kadwas show a large decline possibly due to a real change in feeling as already explained. The Marathas, Sonis, and even Kolis show an improvement in this respect. The great Kanbi community has shewn that they are now even more unwilling to postpone the marriage of their girls till after puberty. With the untouchables, girls under twelve are now married even more frequently than before.

Caste	Literate in		Proportion of married and widowed females per mille of females aged					
			0–5		5–12		0–12	
	1911	1921	1911	1921	1911	1921	1911	1921
1	2	3	4	5	6	7	8	9
Anjana ..	81	74	44	28	251	226	133	148
Kadwa ..	87	122	634	62	916	216	765	149
Lewa ..	214	259	31	18	210	193	114	123
Soni ..	371	412	16	7	163	91	88	58
Bhavsar	311	376	18	12	188	186	109	116
Ghanchi	261	308	6	10	230	208	121	127
Rajput ..	92	130	25	10	172	164	102	102
Maratha	264	368	6	3	106	69	64	43
Sutar ..	170	215	16	12	246	192	122	135
Koli ..	26	46	41	9	200	123	100	72
Dhed ..	26	45	39	54	346	305	172	195

What has happened is this: there has been a general decline of the proportion of the married amongst girls below 5 and even 10; as a consequence there has been a general movement towards marrying off the girls at about 10th or 11th year amongst these communities. Education has only shifted the marriage age from 0-5 and 5-10 to 10-12.

269. Effect of paucity of girls on adult marriage of males—A second factor has been the paucity of girls in the community. Taking castes among whom the proportion of females to males aged 12 to 20 is the lowest, there sure enough the proportion of unmarried males aged 20-40 is the largest as appears from the marginal statement. The situation in the two censuses is shewn in the margin in regard to these communities. The mean proportion of the male unmarried aged 20-40 for the State is 163 per mille. In 1891, it was only 143. In 1901, the figure rose to 152; ten years later it was found to be 163; and at that figure it has remained since.

Castes	Proportion of unmarried males per mille of males aged 20-40	
	1911	1921
Lewa Kanbi ..	193	196
Anavala Brahman	252	266
Maratha ..	190	224
Rajput	251	194
Wagher ..	258	258
Pathan	273	246

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270. Effect of English Education on adult marriage of males—The effect of education on child marriage has been already alluded to. The influence of English education on the marriage statistics of adult males may be now seen. In the marginal table, the order according to literacy in English is correlated with the order according to the proportion of males aged 20-40 that are unmarried. The castes taken are those that show the highest literacy in English. We find a general correspondence. In these communities which only form a very small minority of the population, the effect of English education has been mainly to raise the standard of life. Thus the tendency is encouraged amongst these advanced communities to postpone the marriage of males to an age when they are better able to support a family. This is generally the case in castes where there is a sufficiency of marriageable females and yet there is evident disinclination to marry seen amongst grown-up males. But as appears from the last column in the marginal table, the paucity of eligible brides also affects the question to no small extent.

Caste	Order according to literacy in English	Proportion of adult male unmarried aged 20-40 (per mille)	Order according to col. 3	Proportion of females to males aged 12-15 per mille.
1	2	3	4	5
Prabhu	1	327	2	916
Parsi	2	370	1	1,743
Deshastha	3	334	3	844
Nagar	4	251	7	962
Hindu Vania ..	5	233	8	837
Anavala	6	266	6	749
Maratha Kshatriya..	7	224	9	797
Jain Vania ..	8	285	4	990
Audich Brahman ..	9	282	5	878

271. Effect of Social Legislation on the age at Marriage—Apart from education and the paucity of brides, the factor that has operated to some extent in checking infant marriage is the Infant Marriage Prevention Law which was passed in July 1904. The law defines the age at which marriage is permissible—12 for girls and 16 for boys. Exemptions are granted in the case of girls between the age of 9 and 12 under special circumstances. The latest change in the enactment is in regard to Kadwa Kanbis. The movement against the periodical marriage custom of the caste has been growing in strength and in pursuance to representations made by the leaders of the reforming section, the marriage age of girls has been reduced to six years and that of boys to eight years as a special concession to this community. In the first seven years of its existence, the law had to encounter the sullen opposition of the people. It was at first applied with little strictness; and the proportion of rejections of applications for permission to marry infants was only about 5 per cent. There were 23,388 convictions under the Act in the first seven years of its operations or 3,341 convictions per year. Since 1911, the number of convictions under the Act is shewn in the marginal statement. The last named year, it may also be mentioned, was a Kadwa Kanbi marriage season. There was thus a total of 40,510 convictions in the last decade, or 4,051 annually. The annual average therefore has risen since 1911. This does not show however that the Act has broken down, but that its application has become wider and stricter. On the whole the Act has had certainly a beneficial effect. The figures of convictions do not accurately gauge the restrictive effect of the regulation. Under the Act, if both the parties to a marriage are infants, there are two offences to a marriage. Secondly, if the State High Court so permits, offences under the Act even if committed by Baroda subjects outside the limits of the State are triable by the local courts. Thus a proportion of the offences above indicated occur outside the State. Therefore the number of offences alone fails as a test of the efficacy of this piece of legislation. Under the Act, however, all marriages whether above the age-limit or against its provisions are registrable by the village registrars (ordinary village patels and talatis). Non-registration of any marriage is penalised. These registration figures are valuable as indicating the trend of the people's attitude. Unfortunately figures previous to 1916 are not available. But the subsequent

OFFENCES AND CONVICTIONS UNDER THE ACT

Year	Number of	
	Offences	Convictions
1911 ..	6,317	5,180
1912 ..	2,216	1,684
1913 ..	2,308	1,800
1914 ..	3,259	2,640
1915 ..	3,834	3,450
1916 ..	4,837	4,421
1917 ..	7,407	6,037
1918 ..	3,741	2,989
1919 ..	4,535	3,718
1920 ..	10,351	8,591

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Year	Number of registered Marriages			
	Contracted after the prescribed age limits	Exempted Marriages	Marriages penalised	Percentage of marriages below age to total
1	2	3	4	5
1916	7,022	30	2,246	24·5
1917	8,911	15	4,245	40·0
1918	6,857	115	3,172	32·4
1919	7,677	296	2,387	25·9
1920	10,398	8	4,311	29·3

figures have been obtained and are here given in the marginal statement, which shows the three kinds of marriages,—(i) the infant marriages which were penalised, (ii) the infant marriages which were allowed, and (iii) marriages beyond the prescribed age-limit. These figures undoubtedly show a downward grade of infant marriages. Registration figures of over-age marriages are defective, as the village registrar only bothers about marriages that are triable under the Act. Making allowance for this factor, we get fairly convincing data of the increasing effectiveness of this law.

272. Correlation between enforced Widowhood and early Marriage—Lastly, the proportion of widows and the practice of enforced widowhood in a community are factors governing the situation regarding the age at marriage. As a general rule, castes that practice infant marriages allow their widows to marry again. This is so amongst Hindus at any rate. Animists and Musalmans have adult marriages and also allow their widows to remarry. Jains on the other hand, although they have adult marriage, rigidly enforce the practice of life-long widowhood. On the other hand castes which are adopting this practice as a matter of social prestige are slowly raising their marriage-age. Amongst Anjamas, Kadwas, Kolis, untouchables and others who practice remarriage of widows, we have already seen that the marriage age is low. Amongst Lewa Kanbis, Sonis, Marathas, Sutars, Bhavsars, etc., who are adopting the other practice of enforced widowhood, the marriage age has risen a little.

273. Statistics regarding the Widowed—Apart from early marriage, the statistics of civil condition offer one other point of interest—the frequency of widowhood. There are according to the present census 167 widows per 1,000 females in the State. The corresponding figures for 1911 and 1901 were 176 and 199 respectively. The proportion of widows is decreasing, but that of the married women is decreasing also, showing that the age of marriage is rising. Widows among infants and children are now very rare, but in the marriageable ages 10-15 and 15-20, the proportion of widows though decreasing is not inconsiderable. The high proportion of widows in 1901 is doubtless due to famine mortality which usually spared the women. But this decrease is not always in evidence in the different religions. Amongst the Jains, although their marriage-age has risen, the proportion of these child-widows aged 10-15 has actually risen from 11 in 1901 and 1911 to 32 in this census. Amongst the Animists, as a result of greater Hinduisation, the proportion of widows has commenced to increase. The proportions of widows in the age-groups 10-15 and 15-20 in 1911 were 2 and 8. The corresponding figures are now 3 and 17. Amongst the Parsis child widows are practically non-existent.

Age Period	Census of		
	1921	1911	1901
10–15 ..	12	21	38
15–20 ..	28	33	87

If the proportion of widows is decreasing the proportion of widowers is increasing from census to census. The figures of 1901 are exceptional. The older the widower the more difficult he is finding it now to marry again. The more humane attitude that is inducing people to postpone the marriage of their girls is also making them avoid disparate marriages for their girls. The older candidate is thus elbowed out by the younger competitors in the marriage market.

Age Period	Proportion of widowers in			
	1921	1911	1901	1891
15–20	32	27	57	13
20–40	87	72	117	43
40–60	199	189	221	141
60 and over ..	400	397	383	325

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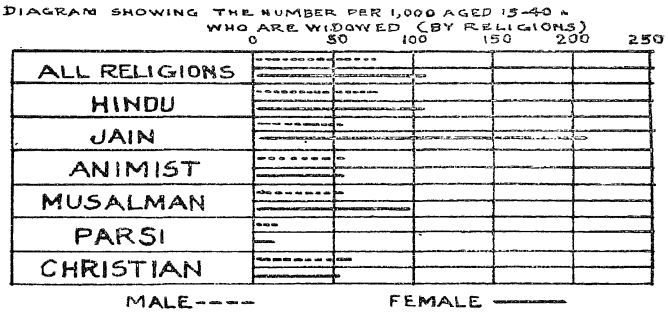
274. Widows at child-bearing periods—A small comparative statement is given wherein the proportion of widows of the child-bearing ages is compared for each religion for the last two censuses. Generally all religions show a smaller figure than ten years ago. The Animist are an exception. and this circumstance must be put down to Hindu influence. The Jains still maintain an unenviable lead: more than a fifth of their women of the reproductive ages are prohibited from marrying. The Parsis show a decline of widows inspite of the increasing disinclination of their young men to marry. It shows that the old prejudice against widow re-marriage is rapidly passing away amongst that progressive community.

Religion	Number per 1,000 women aged 15-40 who are widowed	
	1911	1921
All Religions ..	109	105
Hindu	112	108
Musalman ..	106	99
Animist ..	33	58
Jain	231	209
Parsi	57	28
Christian ..	50	51



The Statistics regarding adult widows by castes show that in the higher strata of Hinduism the proportion of such women is the greatest. The margin illustrates the striking contrasts in this regard. It has been found from a comparison of the sizes of families in the different castes and their ratio of survival, that the population is being replenished from less brainy but physically stronger stocks One of the contributory factors to this process is no doubt the varying proportion of widows in the different social strata. A lower proportion of the widowed obviously would mean a higher birth rate and a greater chance of increase through natural causes.

Castes	Proportion per mille of females aged 20-40 who are widows
Brahman	275
Military and Dominant	196
Vanias—	
Hindu	249
Jain	274
Writers	208
Agriculturists ..	151
Craftsmen and Artisans	134
Labourers	83
Forest Tribes ..	65
Untouchables ..	93

275. Present tendencies towards Widow-remarriage—There are at present two kinds of forces acting from opposite directions in regard to this question. At one end of the scale, are the intellectualist reformers, found in every high caste, who realise that the condemnation of child-widows to perpetual widowhood is a modern aberration of Hinduism that was unknown to its ancient founders. Reforming Sects and social reform associations have frequently preached against the evil and have sometimes acted up to their professions. In Gujarat, however, customs die hard and sentimental appeals in favour of their abolition fall on deaf ears. But it is coming to be recognised that widow remarriage is a matter of social necessity. Rao Bahadur Govindbhai referred to the petitions actually received in 1907 from certain places within the State, which actually requested the State to *compel* widows to marry. Since then no such petitions have been reported. Census Committees have generally reported to me that there is a growing consciousness that the practice should be revived. One committee (from Kalol) reports that the Kadwas have resolved to reinforce *diyar vatu*, or the levirate, amongst their widows. Whether this is a concerted caste action or a movement limited to only a few individuals remains to be seen. From Gandevi it is reported that within recent years numerous cases of remarriage of widows apparently of adult age have occurred. These are reported to be cases of choice marriages between the parties. A few stray cases of Patidars having married widows from the Deccan under the Indian Civil Marriage Act are also reported. The Dabhoi Committee states that amongst Musalman local converts, like

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Vohoras, Tais, Pinjaras, etc., the old prejudice inherited from the Hindus against widow re-marriage is fast passing away.

All these are however tentative and more or less individual efforts. No concerted action or wholesale movement is yet apparent. The truth is that all such efforts are and will be powerless so long as authoritative Hindu opinion continues to regard the prohibition of widow remarriage as a badge of respectability. Amongst the lower Hindu castes, the socially affluent sections are discountenancing the practice of widow remarriage as actively as any Brahman or Vania. Gradually this question is becoming a potent cause of fission in these communities —the section disallowing widow-remarriage being hypergamous to the rest that allow it.

276. Some Miscellaneous points : (*a*) *Evidence of Polygamy from the figures*—The figures showing the proportion of wives to husbands—Subsidiary Table IV—are sometimes taken as a clue to the incidence of polygamy. As mentioned in para. 345 of the last Report, in Gujarat, both Hindus and Musalmans are as a rule monogamous. Only some Brahman castes such as Anavala, Audich, Tapodhan, etc., and some Vania Castes like Dishawals allow polygamy. But the custom is fast passing into desuetude. In 1911 there were 1,007 married women to 1,000 married men. In 1921, the ratio is 1,028 to 1,000. Of course this does not mean that polygamy is therefore on the increase. That the general increase in the population has been made up of a larger quota of women than of men has been already pointed out in the previous chapter. Secondly in our exchanges in migration, we give more men than women. The true incidence of polygamy is thus obscured by the factor of emigration. The same remarks are applicable to the Musalmans, among whom there are 1,018 wives to 1,000 husbands. Amongst Memons and Vohoras—two communities particularly in which a good proportion of husbands is away from home—the ratio of wives to husbands is as 1,118 to 1,000. Amongst the Animists, there is more evidence of polygamy : the factor of migration does not affect to any appreciable extent, so that the proportion of wives to husbands among these tribes may be taken as a fair measure of their polygamous practices. There are now 1,080 wives to 1,000 husbands among them as against 1,013 ten years ago which presumably is indicative of greater prevalence of the practice. But polygamy is often nullified amongst them by the ease with which divorce is sought and obtained. The Parsis show a large excess of wives : 1,383 to the thousand : this is entirely due to migration of their males as the Parsis are a monogamous community.

(*b*) *Disparate Marriages*—The Sex Enquiry has already shewn us that 38 per cent. of husbands are on an average more than ten years older than their wives. From Subsidiary Table IV we learn that at each of the age periods 0-10 and 10-15 there are more than twice as many wives as husbands both amongst Hindus and Musalmans.

From Imperial Table XIV we learn that where the marriage age is low there is often less disparity between the ages of the couples. Amongst the Kadwas, Anjanas, Ghanchis and Golas, the proportion of husbands to wives in the age period 5-12 ranges from 59 to 79 per cent. While amongst the Nagars, Anavalas, Marathas, Audich Brahmans, the proportions are 24, 47, 26 and 29 respectively. This disparity of age amongst the higher castes counteracts the effect of the higher marriage age and favours early widowhood.

(*c*) *Statistics regarding adult spinsters*—Imperial Table VII shows that there are 15,375 spinsters of the age of 15 and upwards. Of these, 188 are afflicted with some infirmity, as shewn in State Table XIV. In 1911, there were 13,762 spinsters of that age and over. Thus there is an increase of spinsters in the State. The bulk of these are of course of the ages 15-20 and are waiting to be married. A good few of the remainder are prostitutes and kept women. Spinsters, aged 20 and over, numbered 4,880 in 1911 and 5,238 in 1921. To the last figure, some of the forest tribes (Bhil, Chodhra, Dhodia, Gamit, Dubla and Nayakda) and Kolis contribute 1,348. The remaining contributories are communities which favour late marriage like Parsis (412) or Nagar (14) or Vohora (103) or those others which prize high birth or *kulinism* like Saiyads (29), Barots (34), Audich (34), Lewa Kanbis (116) and Rajputs (56).

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(*d*) *Civil Condition in Rural and Urban Areas*—Lastly the state of things regarding civil condition in rural and urban areas may be briefly contrasted. In the marginal statement, the proportion of the unmarried by sex is shewn in the different areas. The urban areas and the City particularly show a low proportion of the unmarried. Of the females under the age of 15, 16 per cent. are arried in urban areas and 18 in rural, so that in the former, the marriage rate is high, and the marriage age is higher than in rural areas. Of the women of child-bearing age (15-40), 133 per mille are widows in towns, while the corresponding figure for the State is 105. Subsidiary Table II shows that the proportion of widows to the total female population is the highest in the City of Baroda. Of the married population in the City there are 869 wives to a thousand husbands. In the urban areas, the proportion of wives to husbands figures at 967. In the whole State, as we have seen, it is 1,028. Thus while the general population suffers from the adverse effect of emigration which selects against males, the City and urban areas generally show the influence of immigration which selects against females.

Area	Proportion of unmarried (per mille)	
	Male	Female
State	*461*	*32*
City of Baroda..	435	281
Urban Areas ..	447	299
Rural Areas ..	465	341

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SUBSIDIARY TABLE I.—DISTRIBUTION BY CIVIL CONDITION OF 1,000 OF EACH SEX RELIGION AND MAIN AGE-PERIOD AT EACH OF THE LAST FIVE CENSUSES

Religion, Sex and Age	Unmarried					Married					Widowed				
	1921	1911	1901	1891	1881	1921	1911	1901	1891	1881	1921	1911	1901	1891	1881
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
All Religions															
MALES															
0–5	990	959	973	957	932	8	39	24	41	65	2	2	3	2	3
5–10	918	883	897	879		50	111	91	117		2	6	9	4	
10–15 .	803	753	730	721	732	185	236	245	272	260	12	11	25	7	8
15–20	527	539	462	488	486	441	434	481	499	499	32	27	57	13	15
20–40 ..	163	163	152	143	156	750	765	731	814	796	87	72	117	43	48
40–60 ..	53	47	65	62	66	748	764	714	797	795	199	189	221	141	139
60 and over	15	19	66	57	66	555	554	551	618	614	400	397	383	325	290
FEMALES															
0–5 .. .	985	915	961	907	846	15	83	36	92	151	..	2	3	1	3
5–10	886	807	836	763		112	188	154	234		2	5	10	4	
10–15	547	464	477	446	453	441	515	485	542	531	12	21	38	12	16
15–20	132	111	127	103	100	840	856	786	875	868	28	33	87	22	32
20–40	14	11	16	14	11	862	862	786	891	873	124	127	198	95	116
40–60	4	5	5	6	3	519	467	487	530	539	477	528	508	464	458
60 and over ..	2	4	5	3	2	176	454	250	162	199	822	842	745	835	799
Hindu															
MALES															
0–5	989	952	972	956	924	9	45	25	42	73	2	3	3	2	3
5–10	941	867	894	871		57	126	96	125		2	7	10	4	
10–15	775	725	716	704	709	211	263	256	288	281	14	12	28	8	10
15–20	483	514	444	471	462	481	457	492	516	522	36	29	64	13	16
20–40	156	159	148	137	151	754	766	733	821	800	90	75	119	42	49
40–60	55	48	68	53	68	741	758	709	804	792	204	194	223	143	140
60 and over ..	45	52	73	58	70	550	546	555	616	640	405	402	372	326	290
FEMALES															
0–5	982	902	956	899	826	18	96	40	100	171	..	2	4	1	3
5–10	872	777	826	744		126	218	162	252		2	5	12	4	
10–15	494	405	438	415	412	492	570	518	572	571	14	25	44	13	17
15–20	81	83	106	97	85	890	882	799	881	882	29	35	95	22	33
20–40	5	8	10	13	9	868	863	784	894	874	127	129	206	93	117
40–60	3	3	3	6	3	510	458	469	533	538	487	539	528	461	459
60 and over ..	1	2	4	4	2	169	151	221	162	196	830	847	775	834	802
Jain															
MALES															
0–5	994	992	959	952	990	5	8	29	47	9.5	1	..	12	1	0·5
5–10	985	980	889	942		13	19	78	57		2	1	33	1	
10–15	955	890	750	847	879	41	107	229	150	119	4	3	21	3	2
15–20	671	658	508	569	615	320	333	455	423	378	9	9	37	8	7
20–40	281	269	218	267	265	650	664	676	689	686	69	67	106	44	49
40–60	105	95	96	121	99	672	677	685	714	740	223	228	219	165	161
60 and over ..	101	75	74	96	71	455	476	539	542	612	444	449	387	362	317
FEMALES															
0–5	996	989	963	980	973	3	10	27	19	26	1	1	10	1	1
5–10	966	978	871	965		34	21	112	32		..	1	17	3	
10–15	789	739	605	728	668	179	250	384	265	321	32	11	11	7	11
15–20	88	71	111	54	58	873	880	801	914	891	39	49	88	32	31
20–40	9	7	11	16	6	743	723	738	828	823	248	270	251	162	171
40–60	4	3	1	7	2	370	356	446	421	468	626	641	553	572	530
60 and over ..	3	7	1	..	..	109	110	217	135	176	888	883	782	865	824
Animist															
MALES															
0–5	998	996	997	991	995	2	4	2·9	9	4·9	..	..	·1	..	·1
5–10	989	979	951	984		11	20	48	16		..	1	1	..	
10–15	963	945	834	945	949	36	54	163	54	50	1	1	3	1	1
15–20	804	736	541	641	661	188	252	439	344	333	8	12	20	15	6
20–40	163	119	134	97	132	765	842	763	870	832	72	39	103	33	36
40–60	30	22	22	20	25	808	863	777	855	866	162	115	201	125	109
60 and over ..	21	36	16	14	26	618	653	487	698	683	361	311	497	288	291

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SUBSIDIARY TABLE I—DISTRIBUTION BY CIVIL CONDITION OF 1,000 OF EACH SEX, RELIGION AND MAIN AGE-PERIOD AT EACH OF THE LAST FIVE CENSUSES—*contd.*

Religion, Sex and Age	Unmarried					Married					Widowed				
	1921	1911	1901	1891	1881	1921	1911	1901	1891	1881	1921	1911	1901	1891	1881
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Animist—*contd.*															
FEMALES															
0-5	997	998	998	990	993	3	2	1·8	10	6·8	..	..	0·2	..	0·2
5-10	954	980	929	983		44	19·9	70·6	17		2	0·1	0.4	..	
10-15	820	850	671	823	865	177	148	325	176	133	3	2	4	1	2
15-20	476	388	226	279	333	507	604	739	714	653	17	8	35	7	14
20-40	86	33	38	30	34	845	928	836	918	910	69	39	126	52	56
40-60	8	9	5	12	5	694	700	684	652	681	298	291	311	336	314
60 and over ..	2	6	1	6	5	388	254	445	254	352	610	740	554	740	643
Musalman															
MALES															
0-5	995	986·8	950	981	964	5	13	45	19	34	..	0·2	5	..	2
5-10	973	957	869	937		25	41	122	61		2	2	9	2	
10-15	900	866	752	841	835	94	128	228	154	159	6	6	20	5	6
15-20	705	658	532	645	659	283	328	427	347	326	12	14	41	8	15
20-40	207	205	193	192	211	721	727	687	766	740	72	68	120	42	49
40-60	43	38	71	44	58	780	785	696	819	801	177	177	233	137	141
60 and over ..	40	31	68	43	43	580	585	576	642	668	380	384	356	315	289
FEMALES															
0-5	993	969	946	972	925	7	30	50	27	72	..	1	4	1	3
5-10	941	914	822	886		58	83	166	112		1	3	12	2	
10-15	743	635	602	630	625	252	356	375	364	364	5	9	23	6	11
15-20	224	158	197	141	152	745	814	724	836	815	31	28	79	23	33
20-40	15	19	43	20	21	870	858	760	876	852	115	123	197	104	127
40-60	6	12	20	9	8	521	467	498	497	504	473	521	482	494	488
60 and over ..	4	6	15	7	7	148	153	283	145	172	848	841	702	848	821
Parsi															
MALES															
0-5	1,000	1,000	1,000	983	980	..	..	..	17	16	..	..	..	..	4
5-10	1,000	995	983	986		..	5	17	14		..	..	..	..	
10-15	991	996	958	932	830	9	4	40	68	164	..	..	2	..	6
15-20	983	951	808	734	416	17	49	185	254	573	..	..	7	12	11
20-40	370	352	241	126	83	582	622	707	854	813	48	26	52	20	104
40-60	54	29	25	8	12	839	880	814	908	654	107	91	161	84	334
60 and over ..	14	18	13	3	2	698	691	728	714	426	288	291	259	283	572
FEMALES															
0-5	1,000	1,000	998	991	943	..	..	2	9	56	..	..	..	..	1
5-10	998	987	975	970		2	11	25	30		..	2	..	.	
10-15	1,000	954	909	766	617	..	46	85	234	376	..	..	6	..	7
15-20	849	793	389	325	134	151	200	564	651	863	..	7	47	24	3
20-40	283	202	47	38	10	680	725	849	895	955	37	73	104	67	35
40-60	42	71	..	5	..	598	641	593	682	878	360	288	407	313	122
60 and over ..	..	88	..	..	..	274	182	224	288	516	726	730	776	712	484
Christian															
MALES															
0-5	982	961	949	1000	984	16	37	40	..	16	2	2	11	..	..
5-10	824	615	870	963		166	380	116	37		10	5	14	..	
10-15	658	553	612	737	941	292	413	347	263	59	50	34	41	..	..
15-20	489	397	257	911	920	463	561	683	89	80	48	42	60	..	..
20-40	123	103	70	384	666	808	833	835	607	315	69	64	95	9	19
40-60	35	19	19	61	132	817	824	840	829	750	148	157	141	110	118
60 and over ..	36	18	23	..	167	565	613	701	1,000	666	399	369	276	..	167
FEMALES															
0-5	937	858	917	970	981	61	132	67	30	19	2	10	16	..	..
5-10	627	462	540	840		350	418	443	120		23	120	17	40	
10-15	510	323	260	937	889	456	662	692	63	111	34	15	48	..	..
15-20	364	304	86	714	333	620	690	828	286	667	16	6	86	..	..
20-40	40	35	13	141	78	901	900	887	798	875	59	65	100	61	47
40-60	8	7	..	..	..	604	574	505	790	450	388	419	495	210	550
60 and over ..	..	9	109	..	..	174	195	182	250	..	826	796	709	750	1,000

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SUBSIDIARY TABLE II.—DISTRIBUTION BY CIVIL CONDITION OF 1,000 OF EACH SEX,

Religion and Natural Division	Males																	
	All ages			0–5			5–10			10–15			15–40			40 and over		
	Unmarried	Married	Widowed	Unmarried	Married	Widowed	Unmarried	Married	Widowed	Unmarried	Married	Widowed	Unmarried	Married	Widowed	Unmarried	Married	Widowed
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Baroda State.																		
All Religions	*461*	*455*		*990*	*8*	*2*	*948*	*50*	*2*	*803*	*185*	*12*	*242*	*683*	*75*	*51*	*710*	*239*
Hindu	450	463	87	989	9	2	941	57	2	775	211	14	227	695	78	52	704	244
Jain	516	393	91	994	5	1	985	13	2	955	41	4	363	581	56	104	626	270
Animist	546	396	58	998	2	..	989	11	..	963	36	1	295	646	59	28	778	194
Musalman	486	437	77	995	5	..	973	25	2	900	94	6	307	633	60	42	735	223
Parsi	569	369	62	1,000	..	..	1,000	..	..	991	9	..	565	402	33	40	788	172
Christian	407	521	72	982	16	2	824	166	10	658	292	50	195	740	65	35	770	195
Central Gujarat.																		
All Religions	*420*	*496*	*84*	*988*	*7*	*5*	*933*	*63*	*4*	*741*	*249*	*10*	*200*	*734*	*66*	*60*	*707*	*233*
Hindu	415	500	85	987	7	6	931	65	4	728	263	9	192	740	68	62	703	235
Jain	477	433	90	984	14	2	973	22	5	909	91	..	318	636	46	103	627	270
Animist	487	463	50	995	4	1	978	21	1	909	88	3	189	759	52	19	833	148
Musalman	446	473	81	993	7	..	954	43	3	836	152	120	268	675	57	46	725	229
Christian	347	568	85	978	20	2	780	207	13	467	459	74	114	811	75	27	757	216
Baroda City.																		
All Religions	*435*	*470*	*95*	*999*	*1*	..	*960*	*39*	*1*	*838*	*156*	*6*	*299*	*627*	*74*	*61*	*683*	*256*
Hindu	429	475	96	999	1	..	952	47	1	813	180	7	287	639	74	61	678	261
Jain	453	434	113	1,000	..	..	1,000	..	..	951	49	..	306	611	83	88	608	304
Animist	358	597	45	1,000	..	..	1,000	..	..	1,000	..	..	177	823	..	63	750	187
Musalman	441	462	97	1,000	..	..	997	3	..	919	81	..	332	590	78	56	706	238
Parsi	542	410	48	1,000	..	..	1,000	..	..	963	37	..	617	358	25	102	786	112
Christian	583	385	32	1,000	..	..	1,000	..	..	945	43	12	395	565	40	71	848	81
North Gujarat.																		
All Religions	*472*	*441*	*87*	*987*	*12*	*1*	*943*	*55*	*2*	*791*	*189*	*20*	*250*	*665*	*85*	*49*	*710*	*241*
Hindu	469	444	87	986	13	1	940	58	2	777	201	22	241	671	88	47	711	242
Jain	523	386	91	996	3	1	987	11	2	961	33	6	372	572	56	107	624	269
Musalman	498	426	76	995	5	..	971	27	2	916	80	4	321	620	59	38	742	220
South Gujarat.																		
All Religions	*486*	*439*	*75*	*997*	*3*	..	*962*	*38*	..	*852*	*146*	*2*	*248*	*688*	*64*	*35*	*724*	*241*
Hindu	415	495	90	996	4	..	924	75	1	713	283	4	173	757	70	40	681	279
Jain	511	384	105	1,000	..	..	980	20	..	994	6	..	372	555	73	78	593	329
Animist	551	389	60	999	1	..	990	10	..	968	31	1	306	635	59	29	772	199
Musalman	522	409	69	997	3	..	988	12	..	924	74	2	329	618	53	31	751	218
Parsi	577	360	63	1,000	..	..	1,000	..	..	998	2	..	563	404	33	28	788	184
Kathlawad.																		
All Religions	*527*	*394*	*79*	*998*	*2*	..	*990*	*10*	..	*955*	*44*	*1*	*304*	*622*	*74*	*53*	*708*	*239*
Hindu	521	398	81	998	2	..	989	10	1	952	47	1	298	626	76	53	704	243
Musalman	563	373	64	999	1	..	991	9	..	997	22	1	335	607	58	45	750	205

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AT CERTAIN AGES IN EACH RELIGION AND NATURAL DIVISION

FEMALES																	
All ages			0–5			5–10			10–15			15–40			40 and over		
Unmarried	Married	Widowed	Unmarried	Married	Widowed	Unmarried	Married	Widowed	Unmarried	Married	Widowed	Unmarried	Married	Widowed	Unmarried	Married	Widowed
20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
332	*501*	*167*	*985*	*15*	..	*886*	*112*	*2*	*547*	*441*	*12*	*37*	*858*	*105*	*3*	*443*	*554*
316	512	172	982	18	..	872	126	2	494	492	14	20	872	108	3	433	564
319	411	270	996	3	1	966	34	..	789	179	32	24	767	209	4	307	689
470	448	82	997	3	..	954	44	2	820	177	3	168	774	58	7	646	347
358	471	171	993	7	..	941	58	1	743	252	5	56	845	99	6	426	568
444	386	170	1,000	..	..	998	2	..	1,000	..	..	412	560	28	29	493	478
335	558	107	937	61	2	627	350	23	510	456	34	99	850	51	7	536	457
290	*548*	*162*	*981*	*19*	..	*815*	*182*	*3*	*429*	*558*	*13*	*16*	*892*	*92*	*6*	*473*	*521*
282	555	163	981	19	..	803	194	3	398	588	14	12	896	92	6	474	520
299	447	254	984	11	5	957	43	..	681	304	15	24	805	171	1	319	680
443	491	66	997	3	..	971	28	1	747	252	1	70	892	38	18	681	301
324	506	170	986	13	1	898	100	2	597	395	8	26	880	94	7	435	558
308	576	116	924	73	3	554	416	30	465	495	40	73	869	58	6	534	460
281	*488*	*231*	*996*	*4*	..	*911*	*86*	*3*	*553*	*438*	*9*	*25*	*842*	*133*	*3*	*328*	*669*
269	493	238	995	5	..	898	99	3	502	488	10	14	845	141	3	317	681
299	448	253	1,000	..	..	972	28	..	689	295	16	12	822	166	..	308	692
300	620	80	1,000	..	..	1,000	..	..	556	444	..	45	955	..	..	600	400
322	470	208	999	1	..	974	26	..	757	242	1	53	847	100	11	356	633
480	409	111	1,000	..	..	1,000	..	..	1,000	..	..	434	525	41	38	633	329
392	532	76	1,000	..	..	849	151	..	625	375	..	159	801	40	17	621	362
331	*488*	*181*	*978*	*21*	*1*	*894*	*104*	*2*	*527*	*457*	*16*	*25*	*851*	*124*	*2*	*404*	*594*
330	493	177	977	22	1	889	109	2	502	483	15	22	857	121	2	408	590
310	402	288	998	1	1	964	36	..	796	158	46	23	747	230	5	299	696
365	455	180	995	5	..	942	56	2	766	228	6	57	829	114	4	411	585
384	*493*	*123*	*995*	*5*	..	*917*	*82*	*1*	*638*	*354*	*8*	*101*	*823*	*76*	*4*	*538*	*458*
300	551	149	993	7	..	867	132	1	419	567	14	19	891	90	1	485	514
352	422	226	1,000	..	..	993	7	..	881	119	..	29	823	148	4	278	718
473	443	84	997	3	..	952	46	2	829	168	3	178	762	60	6	643	351
385	460	155	993	7	..	964	36	..	834	163	3	101	813	86	6	458	536
440	383	177	1,000	..	..	995	5	..	1,000	..	..	413	559	28	25	483	492
402	*435*	*163*	*997*	*3*	..	*985*	*14*	*1*	*842*	*154*	*4*	*39*	*862*	*99*	*2*	*428*	*570*
399	436	165	997	3	..	984	15	1	833	163	4	35	865	100	2	424	574
421	438	141	998	2	..	995	5	..	904	92	4	70	851	79	3	472	525

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SUBSIDIARY TABLE III.—DISTRIBUTION BY MAIN AGE-PERIODS AND CIVIL CONDITION OF 10,000 OF EACH SEX AND RELIGION

Religion and Age	Males			Females		
	Unmarried	Married	Widowed	Unmarried	Married	Widowed
1	2	3	4	5	6	7
All Religions	**4,615**	**4,547**	**838**	**3,321**	**5,014**	**1,665**
0–10	2,567	80	5	2,530	173	3
10–15	987	227	14	641	516	15
15–40	949	2,684	294	142	3,335	409
40 and over	112	1,556	525	8	990	1,238
Hindu	**4,500**	**4,633**	**867**	**3,162**	**5,121**	**1,717**
0–10	2,542	91	6	2,500	193	4
10–15	947	259	17	579	577	16
15–40	896	2,737	308	76	3,369	419
40 and over	115	1,546	536	7	982	1,278
Jain	**5,159**	**3,928**	**913**	**3,192**	**4,105**	**2,703**
0–10	2,250	21	4	2,186	43	2
10–15	1,225	53	5	901	204	37
15–40	1,420	2,273	221	95	3,037	825
40 and over	264	1,581	683	10	821	1,839
Animist	**5,456**	**3,960**	**584**	**4,698**	**4,478**	**824**
0–10	3,068	20	1	3,040	74	3
10–15	1,218	46	1	973	209	3
15–40	1,117	2,444	221	674	3,103	231
40 and over	53	1,450	361	11	1,092	587
Musalman	**4,858**	**4,369**	**773**	**3,583**	**4,704**	**1,713**
0–10	2,460	39	2	2,484	84	2
10–15	1,102	116	7	865	293	6
15–40	1,196	2,470	234	221	3,339	390
40 and over	100	1,744	530	13	988	1,315
Parsi	**5,693**	**3,690**	**617**	**4,442**	**3,856**	**1,702**
0–10	2,277	..	..	1,765	5	..
10–15	1,376	12	..	954	..	..
15–40	1,923	1,367	111	1,627	2,210	112
40 and over	117	2,311	506	96	1,641	1,590
Christian	**4,065**	**5,213**	**722**	**3,347**	**5,578**	**1,075**
0–10	2,247	228	15	2,190	609	38
10–15	925	411	70	752	673	49
15–40	828	3,145	276	393	3,376	204
40 and over	65	1,429	361	12	920	784

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SUBSIDIARY TABLE IV.—PROPORTION OF THE SEXES BY CIVIL CONDITION AT CERTAIN AGES FOR RELIGIONS AND NATURAL DIVISIONS

Natural Division and Religion	Number of Females per 1,000 Males														
	All ages			0–10			10–15			15–40			40 and over		
	Unmarried	Married	Widowed	Unmarried	Married	Widowed	Unmarried	Married	Widowed	Unmarried	Married	Widowed	Unmarried	Married	Widowed
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Baroda State															
All Religions	*671*	*1,028*	*1,852*	*919*	*2,006*	*632*	*605*	*2,117*	*922*	*139*	*1,159*	*1,296*	*66*	*593*	*2,202*
Hindu	651	1,024	1,834	912	1,971	577	566	2,066	870	79	1,141	1,259	53	588	2,209
Jain	609	1,028	2,912	956	2,022	500	724	3,800	7,182	66	1,314	3,670	365	511	2,647
Animist	822	1,080	1,349	946	3,465	3,500	763	4,346	4,333	576	1,213	1,000	210	719	1,553
Musalman	697	1,018	2,095	955	2,043	800	741	2,390	893	174	1,278	1,572	121	535	2,347
Parsi	1,033	1,383	3,650	1,026	..	..	917	..	..	1,120	2,140	1,333	1,079	939	4,159
Christian	709	921	1,281	839	2,297	2,167	699	1,409	607	409	924	636	154	554	1,868
Central Gujarat															
All Religions	*612*	*979*	*1,710*	*860*	*2,496*	*348*	*506*	*1,960*	*1,199*	*69*	*1,054*	*1,193*	*88*	*596*	*1,993*
Hindu	600	982	1,696	848	2,551	304	476	1,944	1,317	56	1,005	1,168	82	605	1,987
Jain	559	919	2,489	905	1,389	500	577	2,574	..	68	1,147	3,370	8	458	2,270
Musalman	639	994	1,853	934	2,101	636	621	2,264	538	83	1,108	1,400	123	513	2,085
Baroda City															
All Religions	*541*	*869*	*2,025*	*935*	*2,047*	*2,000*	*501*	*2,137*	*1,086*	*64*	*1,029*	*1,370*	*49*	*440*	*2,398*
Hindu	531	879	2,095	923	1,919	2,000	472	2,076	1,061	39	1,023	1,476	24	440	2,447
Musalman	595	829	1,750	989	10,000	..	686	2,493	..	116	1,041	927	160	424	2,235
North Gujarat															
All Religions	*669*	*1,054*	*1,984*	*935*	*1,667*	*1,006*	*592*	*2,152*	*701*	*93*	*1,209*	*1,376*	*40*	*567*	*2,453*
Hindu	683	1,054	1,922	931	1,689	1,025	573	2,130	637	86	1,195	1,291	36	572	2,429
Jain	621	1,092	3,315	968	2,435	250	753	4,316	6,455	68	1,410	4,456	51	543	2,930
Musalman	717	1,047	2,334	983	1,855	1,000	753	2,546	1,462	183	1,363	1,958	96	523	2,511
South Gujarat															
All Religions	*782*	*1,112*	*1,030*	*996*	*2,008*	*2,538*	*711*	*2,295*	*3,795*	*424*	*1,238*	*1,234*	*100*	*711*	*1,812*
Hindu	722	1,112	1,655	955	1,663	1,444	592	2,018	3,703	112	1,204	1,318	182	692	1,791
Animist	821	1,090	1,359	941	4,022	5,000	762	4,811	8,333	591	1,219	1,027	175	731	1,548
Musalman	797	1,212	2,437	966	2,909	..	890	2,153	1,667	364	1,568	1,940	208	654	2,641
Kathiawad															
All Religions	*713*	*1,031*	*1,932*	*958*	*1,329*	*857*	*782*	*3,130*	*2,533*	*117*	*1,258*	*1,223*	*41*	*589*	*2,329*
Hindu	711	1,017	1,892	965	1,376	786	773	3,074	2,429	105	1,225	1,173	40	588	2,306
Musalman	735	1,154	2,171	901	533	..	838	3,750	4,000	230	1,539	1,484	56	611	2,481

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SUBSIDIARY TABLE V.—DISTRIBUTION BY CIVIL CONDITION

Caste	Distribution of 1,000 males of each age by civil condition																	
	All ages			0–5			5–12			12–20			20–40			40 and over		
	Unmarried	Married	Widowed	Unmarried	Married	Widowed	Unmarried	Married	Widowed	Unmarried	Married	Widowed	Unmarried	Married	Widowed	Unmarried	Married	Widowed
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
HINDU, JAIN AND ANIMIST																		
The Brahmans	**500**	**399**	**101**	**996**	**4**	..	**973**	**26**	**1**	**793**	**202**	**5**	**279**	**644**	**77**	**100**	**617**	**283**
Brahman Anavala	524	384	92	1,000	..	..	975	25	..	712	253	5	266	681	53	157	541	302
,, Audich	491	410	99	997	3	..	972	26	2	791	204	5	282	637	81	83	645	272
,, Deshastha	526	363	111	987	13	..	971	26	3	942	58	..	334	596	70	103	582	315
,, Nagar	517	382	101	1,000	..	..	983	17	..	870	127	3	251	678	71	97	622	281
The Warrior Class (Hindu).	**473**	**445**	**82**	**994**	**6**	..	**951**	**48**	**1**	**700**	**284**	**16**	**209**	**714**	**77**	**76**	**686**	**238**
Maratha Kshatriya	453	460	87	997	3	..	981	17	2	828	141	31	224	698	78	34	737	229
Rajput	468	451	81	993	7	..	942	57	1	666	320	14	194	730	76	83	678	239
Vagher	562	349	89	996	..	4	985	15	..	945	51	4	258	634	108	43	703	254
The Writers (Hindu)	**550**	**368**	**82**	**991**	**9**	..	**949**	**51**	..	**912**	**85**	**3**	**292**	**644**	**64**	**61**	**670**	**269**
Brahmakshatriya	404	488	108	1,000	..	..	937	63	..	686	294	20	205	706	89	70	680	250
Prabhu	617	310	73	1,000	..	..	992	8	..	974	26	..	327	622	51	44	671	285
Bards and Actors (Hindu)	**490**	**403**	**107**	**994**	**6**	..	**965**	**34**	**1**	**704**	**278**	**18**	**256**	**637**	**107**	**106**	**618**	**276**
Brahma Bhatt	472	411	117	995	5	..	972	26	2	647	339	14	268	620	112	121	584	295
Traders (Hindu or Jain)	**501**	**403**	**96**	**996**	**4**	..	**980**	**19**	**1**	**763**	**226**	**11**	**257**	**669**	**74**	**91**	**628**	**281**
(I) Hindu Vania	482	411	107	998	2	..	978	20	2	743	241	16	233	676	91	85	620	295
Disawal	447	422	131	996	4	..	978	22	..	684	313	3	231	634	135	75	606	319
Lad	467	419	114	996	4	..	984	15	1	672	284	44	211	698	91	101	592	307
(II) Jain Vania	523	395	82	993	6	1	981	18	1	787	207	6	285	661	54	98	638	264
Shrimali	526	394	80	993	6	1	981	18	1	785	209	6	286	661	53	101	638	261
Agriculturist (Hindu)	**432**	**465**	**103**	**978**	**21**	**1**	**899**	**97**	**4**	**547**	**415**	**38**	**155**	**736**	**109**	**61**	**656**	**283**
Kachhia	352	528	120	1,000	..	..	886	114	..	411	569	20	105	783	112	38	662	300
Kanbi Anjana	451	464	85	964	35	1	847	148	5	596	377	27	209	702	89	55	693	252
,, Lewa	452	448	100	991	9	..	924	73	3	619	368	13	196	716	88	91	620	289
,, Kadwa	404	483	113	966	32	2	879	115	6	451	480	69	103	759	138	26	691	283
Craftsmen and Artisans (Hindu)	**425**	**492**	**83**	**989**	**11**	..	**883**	**113**	**4**	**538**	**434**	**28**	**120**	**795**	**85**	**35**	**727**	**238**
Bhavsar	425	485	90	989	7	4	907	93	..	556	436	8	110	790	70	34	686	280
Darji	443	474	83	980	19	1	897	100	3	601	381	18	111	809	80	23	718	259
Ghanchi	411	511	78	992	8	..	883	114	3	469	509	22	115	808	77	30	735	235
Gola	327	582	91	970	27	3	624	346	30	240	685	75	64	834	102	21	744	235
Kumbhar	413	496	91	987	13	..	849	146	5	458	485	57	98	801	101	26	720	254
Machhi	389	538	73	1,000	..	..	929	68	3	457	527	16	81	841	78	20	782	198
Mochi	424	503	73	993	7	..	883	112	5	575	402	23	116	818	66	15	762	223
Soni	472	437	91	997	3	..	973	26	1	727	259	14	184	729	87	54	684	262
Sutar	441	485	74	991	9	..	917	81	2	626	366	8	153	766	81	69	728	203
Labouring Class (Hindu)	**454**	**473**	**73**	**990**	**10**	..	**934**	**64**	**2**	**627**	**359**	**14**	**118**	**798**	**84**	**25**	**768**	**207**
Baria	370	539	91	984	15	1	895	102	3	435	544	21	102	796	102	26	751	223
Koli	475	455	70	991	9	..	948	51	1	684	305	11	125	794	81	24	768	208
Vaghri	466	467	67	990	10	..	942	56	2	624	363	13	93	812	95	25	805	170
Herdsmen	**433**	**475**	**92**	**983**	**16**	**1**	**880**	**116**	**4**	**544**	**433**	**23**	**137**	**750**	**113**	**23**	**721**	**256**
Ahir	502	417	81	994	6	..	978	20	2	828	162	10	206	709	85	19	736	245
Rabari	427	479	94	982	17	1	869	126	5	518	457	25	131	750	119	24	720	256
Personal Servants	**425**	**481**	**94**	**990**	**9**	**1**	**888**	**107**	**5**	**578**	**400**	**25**	**109**	**805**	**86**	**36**	**683**	**281**
Hajam	424	482	94	989	10	1	881	111	5	564	410	26	108	805	87	36	685	279
Early Tribes	**525**	**416**	**59**	**996**	**4**	..	**985**	**15**	..	**823**	**172**	**5**	**129**	**799**	**72**	**23**	**785**	**192**
Bhil (Hindu and Animist)	525	427	48	995	5	..	981	19	..	747	246	7	82	856	62	21	818	161
Chodhra (Hindu and Animist)	546	390	64	998	1	1	989	10	1	899	97	4	171	755	74	29	762	209
Dhodia (Hindu and Animist)	569	379	52	999	1	..	990	10	..	914	84	2	154	789	57	23	776	201
Nayakda (Hindu and Animist)	496	452	52	994	6	..	982	17	1	769	225	6	114	827	59	17	822	161
The Untouchables (Hindu)	**423**	**518**	**59**	**985**	**15**	..	**880**	**117**	**3**	**489**	**493**	**18**	**68**	**866**	**66**	**16**	**805**	**179**
Bhangi	426	513	61	987	13	..	871	125	4	474	509	17	76	843	81	16	806	178
Chamar (Khalpa)	454	494	52	983	17	..	912	86	2	568	416	16	72	861	67	10	831	159
Dhed	406	533	61	983	17	..	865	132	3	454	526	20	63	874	63	17	797	186
Garoda	446	505	49	996	4	..	873	117	10	542	450	8	70	880	50	21	825	154
Religious Mendicants	**580**	**343**	**77**	**993**	**7**	..	**952**	**47**	**1**	**742**	**250**	**8**	**421**	**515**	**64**	**374**	**439**	**187**
Bava	601	318	81	988	12	..	967	32	1	733	263	4	475	457	68	414	395	191
MUSALMAN																		
With Foreign Strain	**483**	**434**	**83**	**998**	**2**	..	**982**	**18**	..	**850**	**144**	**6**	**229**	**697**	**74**	**43**	**721**	**236**
Pathan	478	440	82	997	3	..	985	15	..	844	148	8	246	682	72	51	720	229
Saiyad	508	408	84	998	2	..	988	11	1	883	109	8	217	702	80	40	719	241
Shaikh	478	439	83	998	2	..	978	22	..	841	154	5	223	703	74	41	722	237
Local Converts	**480**	**445**	**75**	**991**	**8**	**1**	**942**	**52**	**6**	**722**	**262**	**16**	**169**	**760**	**71**	**34**	**749**	**217**
Ghanchi	469	445	86	992	4	4	940	57	3	673	313	14	191	724	85	38	715	247
Memon	488	437	75	981	18	1	949	49	2	721	261	18	127	795	78	30	739	231
Vohora	478	446	76	993	7	..	937	50	13	703	272	25	107	767	66	26	759	215
Religious Mendicants	**451**	**465**	**84**	**992**	**8**	..	**951**	**42**	**7**	**721**	**260**	**19**	**200**	**723**	**77**	**90**	**698**	**212**
PARSI	**569**	**369**	**62**	**1,000**	..	..	**1000**	..	..	**984**	**16**	..	**370**	**582**	**48**	**40**	**788**	**172**
INDIAN CHRISTIAN	**407**	**519**	**74**	**982**	**16**	**2**	**820**	**159**	**21**	**568**	**386**	**46**	**119**	**810**	**71**	**37**	**760**	**203**

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OF 1,000 OF EACH SEX AT CERTAIN AGES FOR SELECTED CASTES

DISTRIBUTION OF 1,000 FEMALES OF EACH AGE BY CIVIL CONDITION																	
All ages			0–5			5–12			12–20			20–40			40 and over		
Unmarried	Married	Widowed	Unmarried	Married	Widowed	Unmarried	Married	Widowed	Unmarried	Married	Widowed	Unmarried	Married	Widowed	Unmarried	Married	Widowed
20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
283	**435**	**282**	**989**	**10**	**1**	**894**	**102**	**4**	**218**	**736**	**46**	**4**	**721**	**275**	..	**310**	**690**
306	461	233	990	10	..	936	61	3	196	776	28	2	765	233	..	359	641
271	434	295	986	13	1	896	99	5	195	750	55	5	712	283	..	304	696
312	407	281	996	4	..	959	34	7	240	708	52	5	743	252	..	308	692
326	384	290	993	5	2	918	79	3	376	569	55	9	671	320	4	305	691
313	**465**	**222**	**991**	**9**	..	**863**	**134**	**3**	**286**	**674**	**40**	**6**	**798**	**196**	**1**	**370**	**629**
310	418	272	997	3	..	931	66	3	260	704	36	9	768	223	3	230	767
299	483	218	990	10	..	836	161	3	267	691	42	4	803	193	1	382	617
496	364	140	1,000	..	..	991	7	2	643	341	16	35	828	137	..	600	400
419	**391**	**190**	**1.000**	..	..	**973**	**27**	..	**497**	**486**	**17**	**7**	**785**	**208**	..	**405**	**595**
248	539	213	1,000	..	..	887	113	..	185	559	56	..	918	82	..	447	553
478	335	187	1,000	..	..	996	4	..	612	378	10	11	728	261	..	385	615
299	**508**	**193**	**980**	**20**	..	**876**	**119**	**5**	**253**	**704**	**43**	**12**	**805**	**183**	**8**	**501**	**491**
296	514	190	968	28	4	892	104	4	204	773	23	10	749	232	14	539	447
318	**414**	**268**	**996**	**3**	**1**	**941**	**50**	**9**	**344**	**597**	**59**	**3**	**736**	**261**	..	**318**	**682**
302	428	270	996	3	1	950	44	6	252	698	50	4	747	249	1	319	680
278	402	320	1,000	..	..	921	56	23	244	681	75	..	683	317	..	261	739
282	452	266	1,000	..	..	975	25	..	190	743	67	6	769	225	2	328	670
336	397	267	997	2	1	931	56	13	436	496	69	2	724	274	..	315	685
335	398	267	996	2	2	928	58	14	431	497	72	3	724	276	..	315	685
290	**522**	**188**	**960**	**40**	..	**793**	**202**	**5**	**177**	**789**	**34**	**2**	**847**	**151**	**1**	**405**	**594**
220	596	184	989	11	..	739	261	..	85	910	5	3	894	103	..	474	526
289	508	203	972	28	..	774	222	4	275	710	15	3	828	169	..	380	620
286	527	187	982	18	..	807	190	3	223	745	22	4	858	138	1	433	566
293	520	187	937	62	1	784	209	7	100	850	50	1	840	159	..	374	626
296	**518**	**186**	**984**	**15**	**1**	**786**	**209**	**5**	**201**	**769**	**30**	**4**	**862**	**134**	**1**	**400**	**599**
254	513	233	988	12	..	814	181	5	114	862	24	1	838	161	3	332	665
293	515	192	973	26	1	799	199	2	252	721	27	1	863	136	..	396	604
292	532	176	990	10	..	792	206	2	190	787	23	7	874	119	2	398	600
220	565	215	986	14	..	474	491	35	53	931	160	1	830	169	..	300	700
315	523	162	981	19	..	762	234	4	250	731	19	5	885	110	..	418	582
322	514	164	992	8	..	854	142	4	159	814	27	3	883	114	..	494	506
318	534	148	992	8	..	778	216	6	219	762	19	6	907	87	4	438	558
293	471	236	993	7	..	909	86	5	206	777	17	3	797	200	..	338	662
289	517	194	988	12	..	808	190	2	149	795	56	2	843	155	1	420	579
340	**527**	**133**	**989**	**11**	..	**848**	**149**	**3**	**254**	**720**	**26**	**2**	**915**	**83**	**1**	**510**	**489**
253	601	146	984	16	..	750	248	2	122	866	12	2	911	87	1	522	477
358	509	133	991	9	..	877	121	2	287	686	27	2	913	85	..	502	498
376	523	101	991	9	..	837	159	4	283	704	13	6	929	65	1	583	416
348	**508**	**144**	**976**	**24**	..	**811**	**186**	**3**	**354**	**627**	**19**	**9**	**899**	**92**	**3**	**478**	**519**
418	433	149	997	3	..	980	20	..	511	475	14	4	908	88	2	444	554
341	515	144	971	29	..	784	212	4	353	627	20	11	898	91	3	480	517
280	**535**	**185**	**973**	**26**	**1**	**763**	**235**	**2**	**179**	**793**	**28**	**3**	**863**	**134**	**3**	**407**	**590**
277	539	184	972	27	1	753	244	3	173	799	28	2	868	130	1	407	592
475	**439**	**86**	**995**	**5**	..	**976**	**24**	..	**613**	**379**	**8**	**38**	**897**	**65**	**7**	**613**	**380**
471	455	74	991	9	..	957	43	..	443	550	7	15	929	56	4	652	344
508	407	85	998	2	..	990	10	..	767	228	5	69	860	71	12	612	376
505	405	90	997	3	..	987	13	..	769	222	9	48	887	65	2	565	433
460	444	87	998	2	..	983	17	..	579	409	12	33	903	64	2	642	356
308	**546**	**146**	**962**	**38**	..	**728**	**266**	**6**	**196**	**777**	**27**	**5**	**902**	**93**	**1**	**457**	**542**
309	551	140	977	23	..	735	258	7	210	767	23	3	902	95	1	473	526
335	520	145	985	15	..	797	198	5	229	735	36	5	894	101	..	474	526
294	557	149	946	54	..	695	299	6	175	799	26	5	908	87	2	447	551
294	545	161	990	10	..	699	295	6	143	828	29	2	883	115	..	449	551
309	**498**	**193**	**976**	**23**	**1**	**851**	**149**	..	**267**	**705**	**28**	**7**	**865**	**128**	**4**	**406**	**590**
327	483	190	980	20	..	890	110	..	301	664	35	8	848	144	6	427	567
353	**449**	**198**	**992**	**8**	..	**948**	**50**	**2**	**464**	**520**	**16**	**21**	**834**	**145**	**9**	**384**	**607**
345	453	202	991	9	..	925	71	4	443	538	19	19	816	165	7	389	604
372	430	198	991	9	..	966	34	..	535	453	12	18	818	164	4	386	610
350	454	196	993	7	..	952	47	1	447	536	17	23	849	128	11	380	609
367	**483**	**150**	**982**	**18**	..	**902**	**95**	**3**	**430**	**553**	**17**	**14**	**887**	**99**	**4**	**479**	**517**
326	536	138	970	30	..	849	151	..	341	649	10	14	895	91	..	566	434
426	483	91	970	30	..	941	58	1	514	482	4	11	928	61	5	611	384
372	488	140	989	11	..	896	100	4	471	514	15	21	898	81	5	497	498
355	**479**	**166**	**993**	**7**	..	**934**	**66**	..	**363**	**602**	**35**	**19**	**880**	**110**	**2**	**426**	**572**
444	**386**	**170**	**1,000**	..	..	**997**	**3**	..	**908**	**92**	**—**	**283**	**680**	**37**	**29**	**493**	**478**
335	**555**	**110**	**936**	**62**	**2**	**637**	**332**	**31**	**438**	**540**	**22**	**33**	**906**	**61**	..	**520**	**480**

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CHAPTER VIII

LITERACY

STATISTICAL DATA

Subject	TABLES		
	Imperial	State	Subsidiary
Education by Religion and Age:—			
,, State Summary	VIII-A	....	....
,, Divisions	VIII-B	....	....
,, City of Baroda	VIII-C	....	....
Education by Age, Sex and Religion	....	....	I
Education by Age, Sex and Locality	....	....	II
Education by Religion, Sex and Locality	....	....	III
Progress of English Education by Age, Sex and Locality since 1891 ..	....	....	IV
Progress of Literacy since 1881	....	....	V
Education by Selected Castes, Tribes and Races with variation since 1911	IX	....	VI
Number of Educational Institutions and Pupils	....	....	VII
Education by Age and Sex in talukas	....	X	VIII
Education in Urban areas	....	XI	IX
Literacy by Scripts	....	XII	X

277. Reference to Statistics.—This chapter is modestly entitled Literacy, while the Tables with which it is concerned are more ambitiously named. But it must be remembered that census statistics regarding education are only concerned with that rudimentary form of it which enables one to acquire the art of writing a letter to a friend and being able to read its reply. For that is in effect, as will be presently explained, the criterion of literacy, with which the census enquirer is concerned. The question of education is one of those live problems which usually excite passionate interest throughout India at the present day. The various problems in connection with it—its governance, its aims, its curricula—are debated constantly everywhere ; but the primary need is the urgency of conquering ignorance which still remains almost universal. Nobody is in doubt on that point. The census throws light on this last and more important aspect of a many-sided problem. It shows how far from decade to decade, the progressive efforts of educational agencies in the different parts of the country have been able to dispel ignorance and bring the minimum knowledge of letters to the doors of the people.

The census figures of this State in regard to Literacy have a special interest. Baroda has been a pioneer in the organisation of compulsory mass instruction in India. The progress of this experiment is watched with anxious interest by many people outside the limits of this State. To these the census results of 1921 will appeal with peculiar force. Imperial Tables VIII and IX are the sources on which the Subsidiary Tables I-VI have been prepared. State Tables X-XII with their Subsidiary Tables VIII-X have been specially compiled for this census. In one of the concluding sections of this chapter, an attempt will be made to correlate the census figures with the returns of the Education Department regarding schools and pupils.

278. The Meaning of the Statistics—*Some Baroda innovations.*—It is in connection with this chapter that the innovations introduced by the present census in this State are the most numerous. To understand the nature of these, it is necessary to go back a little to past history. The term "literate" has undergone changes in interpretation since 1891. In the censuses of 1881 and 1891 three categories were recognised. Those who were wholly unable to read and write were marked off from the literate by an intermediate class called the "learners." The intention was evidently to find out the extent to which the population of the school-going age was under instruction. In spite of the instructions that under "learning" were to be included all those who were under instruction at whatever stage, elementary or advanced, the returns were vitiated by many learners at the early stages of instruction being included under illiterate, and secondly, by many students at advanced stages, such as the collegiate, returning themselves as "literate." Thus there was a considerable discrepancy between the figures of the census and those of the Education Department. In the subsequent censuses

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therefore, the compilation of statistics regarding persons under instruction was wisely left to the educational authorities while the census only contented itself with recording whether a person was able to read and write any language. In 1901, the instructions were rather generally worded. As a result of this vagueness, the literacy figures of that census may have wrongly included many persons able only to spell out a few words of a printed book and sign their own name under the "literate" total. In this respect, the 1891 instructions however were very precise. The "illiterate" were very strictly defined then: "Enter as illiterate those who are not under instruction and who do not know how both to read and write or who can read but not write, or who can sign their own name but not read." Under the vagueness of the instructions in 1901, it was apprehended that persons belonging to one or more of these categories of "illiterates" came into the literate fold. In 1911, it was thought desirable to make the definition more strict and precise. On that occasion the census staff was instructed only to reckon as literate those "who were able to write a letter to a friend and read his reply." In 1921, the above definition of "literate" was retained and enforced in its entirety; but it was also thought that certain categories of the illiterate deserved specification. The learners who have turned their instruction to some little account beyond signing their name, and the adults who can read and understand books, usually of a semi-religious nature, but are unable themselves to write in any language are classes understood to exist in India. The census instructions for 1891 above quoted recognised and even mentioned these classes in defining "illiterate". These classes deserved to be marked off from the mass of the totally illiterate population. The special class therefore of those able to read only but not write was for the first time introduced into the Baroda Census Schedule. The treatment of literacy figures in this way is a well-known practice with foreign censuses. Besides, the inclusion of an intermediate class like this between the literate and the totally illiterate has two other advantages. In the first place, it serves further to define and render precise the class of "literate". Even the definition "ability to write a letter to a friend and read its reply" is liable to be interpreted laxly; people who were just able to write and spell out words with difficulty were possibly counted as literate in 1911; while the existence of a separate class for such doubtful cases, as provided in the present census, helped in a great measure to render the literacy figures of 1921 very accurate indeed. How far operative was this circumstance we shall presently study but the broad conclusion is now stated. Secondly, it is of great practical interest to know, as the Census Commissioner himself points out in his notes on the Chapter, how far literacy once acquired is retained. The comparison by corresponding age periods of literacy figures of two censuses which this question will necessitate will be greatly facilitated by the figures of those able to read only in this census. For the purpose of this enquiry it may be also mentioned that literacy figures for all talukas (State Table X) have been compiled for a larger number of age-groups than those selected for the Imperial Tables. To investigate further how far compulsory education has been successful, literacy-figures for urban areas—where alone its operation may be said to be really effective—have been compiled into the State Table XI on which Subsidiary Table IX is based.

A second innovation has been introduced in this census in regard to the language or languages in which literacy is found to exist. In 1901, a record was made of the language in which a person was able to read and write. In 1911, option was left to this State to do this, but it was not taken. In this census, the Government of this State decided at the instance of the Census Department to collect information not only about the vernacular in which a person was literate, but also about other language or combination of languages in which he knew how to read and write, or at least to read and understand printed books. The question of the place of Indian vernaculars in the scheme of Indian education is always a vexed one; but it was thought that the collection of statistics regarding "ability to understand" other Indian languages besides one's own vernacular would be a valuable contribution to the discussion of that problem. In regard to the position of Hindi, for instance, and its claims to be the *lingua franca*, and also about Urdu and the special attitude of Indian Muslims towards it, statistics regarding their literary influence in Provinces and States beyond their native *habitat* will give us valuable data. Another advantage is claimed—though its operation can only be discussed elsewhere—on behalf of this arrangement—namely, that it helps in getting more accurate results regarding the distribution of languages. It is often asserted and the truth of it will be tested in the next chapter—that many Non-Hindustani Musalmans desire to record Urdu

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as the language of general use in their homes, from motives, it is alleged, of religious patriotism. If this allegation is true, it must be said that they do this at the sacrifice of scientific accuracy. It was therefore thought that by adding a special column showing familiarity with other languages besides the person's own vernacular, this motive to falsify language returns, if it existed at all, would be mitigated considerably. With these objects State Table XII and its corresponding Subsidiary Table X have been prepared.

A third innovation in regard to the Subsidiary Tables has been made at my instance by the Census Commissioner for India for all Provinces and States. It was thought that proportions of literacy calculated on the whole population did not represent the educational situation fairly. In all countries, children under five years are normally outside the schooling age. They are usually assumed to be illiterate. In American and European censuses so far as I know, literacy ratios are reckoned by excluding the child population altogether. In Ireland only persons aged five and over are taken into consideration for percentages in literacy. In the United States of America, similarly, the population below the age of 10 are excluded in the calculation of literacy proportions. Under these circumstances, it was decided by the Census Commissioner for India that in all subsidiary tables the child population was to be assumed as illiterate and excluded for reckoning literacy ratios. For all subsidiary tables except Subsidiary Table V, the age-group 0-5 was therefore excluded. In Subsidiary Table V only persons aged 10 and over were to be reckoned for comparing progress in education. To ensure correct results, all so-called literates below 5 years of age have been excluded from literate columns and shewn as illiterate in the Imperial Tables VIII and IX. The total of such persons is only 49 (28 males and 21 females). Their details by religion are shewn on the title page of Table VIII. In the State Tables X and XI, the age-periods selected are 0-7, 7-10, 10-15, 15-20, 20-30, and 30 and over. The earlier age-groups 7-10 and 10-15 are chosen for correlation with the educational returns with a view to test the progress of the Compulsory Education experiment. The age-periods 20-30 and 30 and over have been retained to find out in particular areas, how far literacy once acquired has been continued. Subsidiary Tables VIII and IX prepared from these State Tables proportion the literacy figures to all ages 7 and over. Subsidiary Table IX further investigates the state of things in literacy for the age-periods 7-15, 15-20, and 20 and over.

279. General Review of results : Extent of Literacy—272,418 persons (231,118 males and 41,300 females) of 5 years of age and over have been returned in this census as being able both to read and write. The total population aged 5 and over in the State numbers 1,851,682 (963,878 males and 887,804 females). Literacy of the minimum standard set by the census is therefore claimed by only 147 per mille of the population of these ages (240 per mille amongst males and 47 amongst females). That is to say excluding the child population, one out of four males and one in twenty-one females claim to have passed that test. There are six literate males to only one such female in the State, or taking the literate as a whole the sex disparity is shewn by the fact that of a hundred literates, 85 are men and 15 are women.

Taking by age-periods, this disparity is less evident in the early groups and grows more and more with the older ages. The margin gives the requisite ratios. (The proportions for the age-periods of 20-30 and 30 and over have been calculated from the State Table X.) Amongst literates thirty years of age and over, only nine per cent. are women, and one female to 10 males are literates in that group. This points to the comparative recency of educational advance amongst women. Further light is thrown on the educational situation by the proportions in each sex of literates by age-periods. Of the male-literates, 66 per cent. are at least twenty years old, *i.e.*, well beyond school age ; 14 per cent. are between 15 and 20 years of age, having just left school either permanently for other walks of life, or to pursue advanced courses of learning; and 20 per cent. are between 5 and 15, *i.e.*, in the school going ages. Among females, the ratios for the above age-groups are 46, 20, and 34 respectively, showing that younger ages predominate among female literates.

Age Periods	Proportion of literate males to	
	100 literate persons	10 literate females
5—10 ..	71	35
10—15 ..	76	32
15—20 ..	80	41
20—30 ..	86	60
30— ..	91	104

Subsidiary Table I gives the particulars of literacy figures proportioned by each sex in the different age-periods. The most important of these age-periods is

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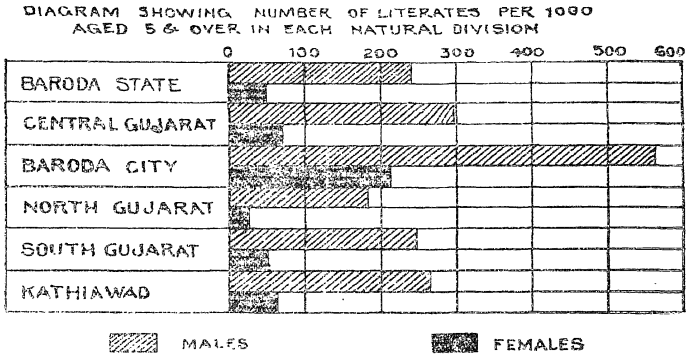
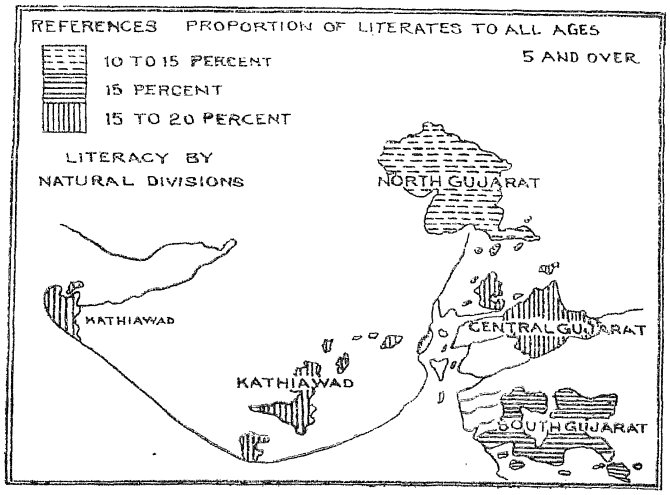
15-20 : the people of these ages have had the most recent schooling: and they represent the educational effort of the last decennium. In this age-period, we find that 354 males and 105 females per mille are literate in the State. Children belonging to the age-period 10-15, *i.e.*, to those years when education in the primary stages may be said to have been effectively begun and completed are literate to the extent of 280 among males and 99 among females, per mille. Of the persons aged 20 and over, one male in about four, and only one female in thirty are literate.

280. Main Results by Locality—Divisions—Coming to detailed figures by divisions, the most favoured part of the State, apart from the capital city of Baroda, is the Central Gujarat Division, followed closely by the Kathiawad Division. South Gujarat comes next and then North Gujarat. The accompanying map and diagram illustrate the educational situation. The map shows how each division fares in regard to literacy in both sexes. In the diagram literacy ratios for males and females separately are shown graphically. Subsidiary Table II contains the necessary proportional figures. In Central Gujarat including the City, 19 per cent. of persons aged 5 and over are literate. Kathiawad has 17 and the Southern and Northern divisions have 15 and 11 per cent. respectively. 30 per cent. of males are literate* in the Central Division. In Kathiawad and South Gujarat, 26 and 25 males respectively are literate in a hundred. In North Gujarat only 18 per cent. of males are literate. Amongst females again, the highest proportion is in Central Gujarat with a literacy of 7 per cent. Kathiawad has 6, South Gujarat 5 and North Gujarat only 3. If we exclude the City of Baroda from Central Gujarat, the male ratio there becomes a little less than Kathiawad; similarly in female literacy, Central Gujarat without the City drops below Kathiawad and even South Gujarat, having only a proportion of 44 per mille of females as literate, against 63 and 50 in the two other divisions.



Taking by age-periods, exactly the same order as for general literacy is seen. With the City, Central Gujarat shows the highest proportion in male literacy, 443 males per mille in the age-period



* In all such general references in this chapter it is understood that only the population aged 5 and over is taken into account except where otherwise indicated.

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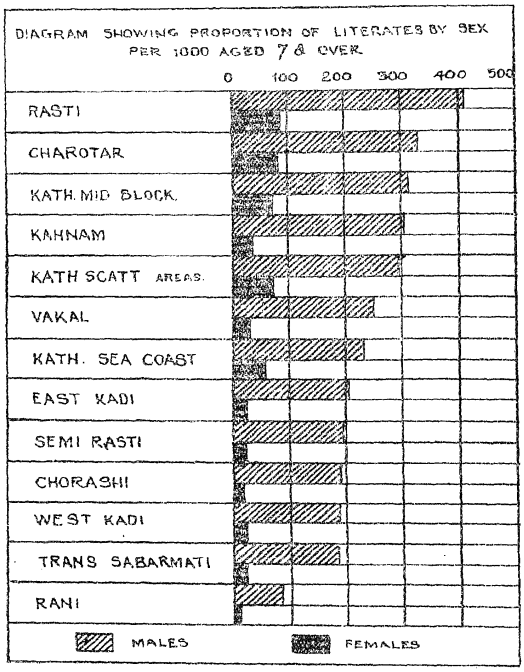
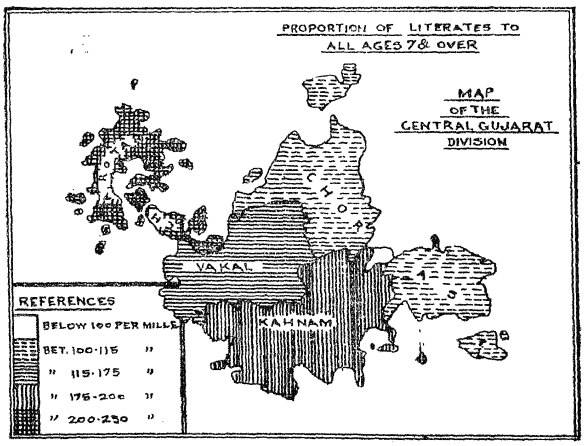
15-20 are literate in that division. Kathiawad is a little behind about male literacy in this age-period with 425. South Gujarat and North Gujarat follow with 350 and 275 respectively. As regards female literacy, Kathiawad shows the most striking results. In the age-periods 10-15 and 15-20, the highest proportions of female literacy are seen in that division. Indeed in all these ratios, the high place for Kathiawad may be generally noted. In many other respects, like density, economic circumstances, agricultural facilities, means of communications and so on, we have seen that this division is the worst off in this State. In primary education and in rudimentary knowledge of letters at least, it takes a high rank however. It was the first division in the Raj to receive the boon of compulsory education. In November 1893, the experiment of mass instruction by compulsion was first begun in the head-quarters taluka of this division. The people of Amreli taluka has had therefore the longest familiarity with this idea; and it is there, apart from the capital city, that the greatest progress has been registered.





281. Literacy by Natural Areas within the Divisions—The main results by natural divisions have been shown. The distribution of literacy within the natural areas of each division may now be examined. The proportional figures for literacy in natural areas within the divisions have been prepared from State Table X, which gives the statistics by talukas. For convenience, the ratios have been calculated for these natural areas, by excluding the children below the age of seven. On this basis, the literate males in the State form 25·7 per cent. of

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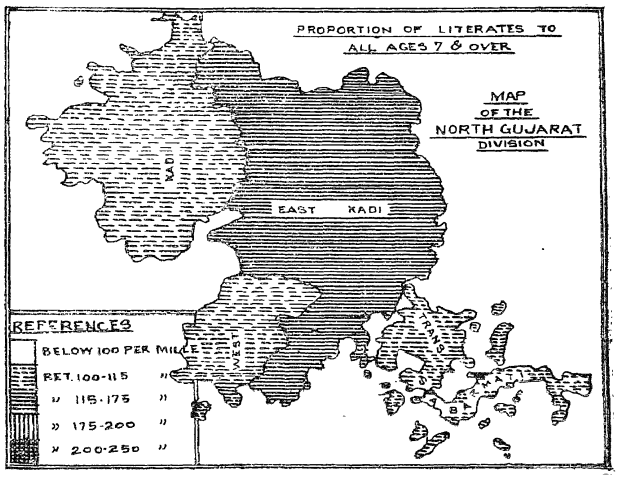
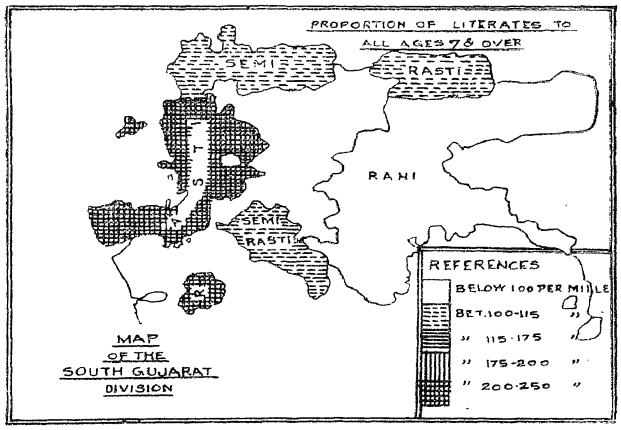
the total males and the female literates are 5 per cent. of the total female population, aged seven and over. The accompanying diagram plots the proportions by sexes separately in each of the natural sub-divisions. A map of each natural division is also given separately showing the extent of literacy proportioned to total population aged 7 and over in its different parts. The diagram arranges the different natural areas according to their order in literacy. It shows clearly how Rasti and Charotar tracts take the lead in educational progress.

Kathiawad has the highest general average in literacy both amongst males and females: but no individual part of it has so high a proportion of literates as the Rasti and Charotar areas. In the former region, male literates number 408 per mille and female literates are 87 per mille. Charotar has 330 and 85. Kahnam and Vakal have both high male literacies but are beaten by the Kathiawad Coast and Scattered Areas in female literacy although these latter are behind them in respect of males. The Northern Division as a whole has a low average of only 116 literate persons per mille (198 for males and 28 for females). East Kadi shows a little better result than this (with 118 per mille): the other two areas (West Kadi and Trans-Sabarmati) have only 112 per mille. The general average of South Gujarat is lower than either Central Gujarat or Kathiawad; but here the distribution of literacy is the least uniform. It contains in Rasti the highest, as well as in the Rani area, the lowest, ratios in literacy. The Rasti talukas with their Parsis, Vohoras and Anavalas have naturally the highest proportion of literates namely 244 per mille. The Rani mahals on the other hand with 88 literate males and 16 literate females per 1,000 of each sex are at the bottom of the educational ladder.





282. Literacy in Urban and Rural Areas compared—Educational effort is generally more successful in urban than in rural areas. The facilities for edu-

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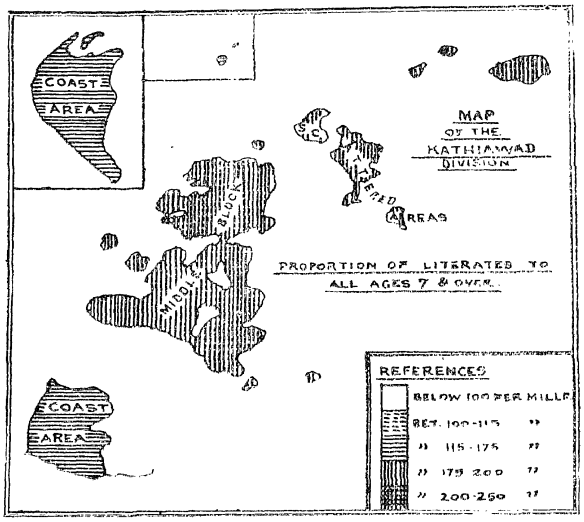

cation can exist more conveniently—school houses, libraries, trained teaching, etc. in towns than in small outlying villages. It is in these areas therefore that the educational agencies have concentrated their efforts and attempted to bring into greater force their compulsory provisions than in the rural parts of the State. In regard to urbanisation, certain tests were suggested in Chapter II, namely occupation, standard of house room, municipal institutions, etc. To these literacy may be now added. The marginal table gives the comparative literacy results of the census in the State as a whole and in urban and rural areas separately. The proportions in the age-period 15-20 show how far intensive has been the operation of general educational facilities in the towns of the State. Of the school-going population, *i.e.* aged 7-15, 40 per cent. of the males and 19 per cent. of the females in urban areas are now literate. In the next census, the age-period 15-20 is bound to show almost general literacy in the town population.

Area	Proportion of literates to mille of population							
	All ages 7 and over		7-15		15-20		15 and Over	
	Male	Female	Male	Female	Male	Female	Male	Female
State	257	50	196	72	354	105	277	12
Urban areas ..	479	132	403	189	630	249	502	116
Rural areas ..	196	27	146	45	281	66	213	21

283. Literacy in the City—The most conspicuous example of success in the State's educational efforts is the City of Baroda. 41 per cent. of the total population are literate. By sex, 562 males and 213 females, per thousand of each sex are literate. The literate ratios for the different age-periods are shewn in the margin. It is interesting to find in the comparison of ratios that the sexes tend most to approach equality in literacy in the age-period 7-15, or the school-going age. Compulsion in this State is for boys and girls alike. In the City the primary educational system is the most completely organised, and both boys and girls avail themselves more or less equally of the facilities afforded by it. The most literate age-periods is 15-20 for males of whom 766 per mille are literate between those ages. The most literate ages for females are 10-15; amongst the girls of these ages 373 per mille are able to read and write. The age-periods 20-30 and 30 and over have been specially compiled in this census.

Age Period	Number literate per 1000 of each sex	
	Male	Female
7 years and over	588	224
7—15	589	340
10 and over ..	600	218
10—15	682	373
15—20	766	370
20 and over ..	562	172
20—30	577	228
30 and over ..	555	147

The proportions in the age-periods 15-20 point to the efficiency of the educational agencies at work in the City. From the latest report we learn that there are in the City 113 different educational institutions, besides the college and six

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secondary schools with over 10,000 pupils. Of these there are 92 primary schools (high and low), 9 special institutions, 7 schools for the children of Sepoys in the Army, 4 kindergarten classes and 1 institution for adult females of the zenana.

284. Comparison with other Cities—The figures for all the other Indian Cities have not yet arrived from the other Provinces and States, but in the meantime a comparison may be made with the literacy results of other cities that are so far available. The margin gives the necessary details. In regard to general literacy the capital of this State takes almost the highest rank in India. Madras is ahead with Calcutta and Rangoon. But these Presidency Cities have large European and other equally highly educated settlements, the adult members of which are usually all literate. Their numbers force up the literacy ratio in these places, but I doubt whether there is any other City in India with a predominantly Indian population like Baroda which has a higher percentage of literacy to show. Baroda is ahead of Bombay City, the two cities in British Gujarat—Ahmedabad and Surat—and of all other cities in the Bombay Presidency. As to the cities in Indian States, the nearest approach to the literacy proportions of Baroda is made by Bangalore and Mysore cities.

Name of City	Proportion of literates per mille of persons aged 5 and over.
Madras	576
Rangoon	473
Calcutta	451
Baroda City	**405**
Dacca	353
Bangalore ..	343
Mysore	334
Surat	324
Poona	266
Ahmedabad	242
Bombay	241
Jammu	215
Lahore	206
Lashkar (Gwalior) ..	205
Karachi	198
Hyderabad (Deccan) ..	190
Delhi	161
Jaipur	137
Srinagar	98

285. Literacy in towns—The literacy figures for towns have been separately compiled in the State Table XI. The figures for certain selected towns have been proportioned in the Subsidiary Table IX where they may be studied in detail. The most interesting columns in that table are those dealing with the age-period 15-20. There the highest proportions are reached. In this age-period the maximum proportion is attained in Bhadran, where 808 males and 505 females per mille are literate. Even Baroda City ratios which are 766 and 370 for this age-period are exceeded in this town. Navsari shows the next highest rate of literacy amongst females to Bhadran (with 420 per mille).

The following towns have at least half its male population (aged seven and over) literate:—

Name of Town	Prant and natural area where situated	Proportion per mille of male literates aged seven and over
Sankheda	Baroda (Chorashi) ..	605
Sojitra	,, (Charotar) ..	592
Baroda City	,, (Vakal) ..	588
Navsari	Navsari (Rasti) ..	574
Kathore	,, (,,) ..	563
Bhadran	Baroda (Charotar) ..	555
Palsana	Navsari (Rasti) ..	551
Atarsumba	Kadi (Transi Sabarmati) ..	538
Gandevi	Navsari (Rasti) ..	536
Amreli	Kathiawad (Middle-Block).	530
Vaso	Baroda (Charotar) ..	511
Pij	,, (,,) ..	
Mehsana	Kadi (East Kadi).	504
Kalol	,, (,,)	

It is significant that in the above list not one of the industrial towns is included. The two temple towns of Dwarka and Beyt are not far behind. Mehsana owes its inclusion in that list to its being the administrative centre, and the largest railway station of the Kadi *Prant*. Amreli has the longest experience with compulsion and has therefore a very high literacy. Of the other towns 8 belong to Charotar and Rasti tracts; the City belongs to Vakal; two are from East Kadi and one each from Trans-Sabarmati and Chorashi. The above list explains the pre-eminence of Charotar and Rasti towns in the matter of literacy. The margin arranges the different natural areas according to their order in urban literacy amongst males. This order is compared with their order in general literacy. The most

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URBAN LITERACY IN NATURAL AREAS

Order according to urban literacy	Name of Natural areas	Proportion of literates to all ages 7 and over (per mille)		Order of natural areas according to total literacy (urban and rural)
		Male	Female	
1	Rasti towns	538	199	1
2	Kathiawad Middle Block Towns.	500	128	3
3	Charotar towns ..	485	164	2
4	Rani towns	457	120	11
5	Trans-Sabarmati towns.	449	166	10
6	Kathiawad Scattered area towns.	442	121	4
7	Kathiawad Coast area towns.	438	112	6
8	Kahnam towns ..	433	82	5
9	West Kadi towns ..	432	86	10
10	Chorashi towns ..	423	61	10
11	Vakal towns ..	395	61	7
12	East Kadi towns ..	394	61	8
13	Semi Rasti towns ..	No town		9

significant disturbance occurs in connection with the Rani literacies. The Rani towns of Vyara and Songadh have a high literacy among their males of over 450 per mille. But the general literacy in that region is only 53 per mille. Both these towns contain large boarding schools for the children of the forest tribes, and Vyara has an active Christian mission working in its neighbourhood. Similarly in the Trans-Sabarmati Area Atarsumba and Dehgam towns with their large Brahman and Vania settlements have high literacy, while the general population in the villages about them is sunk in ignorance. West Kadi beats East Kadi in urban literacy because of its possession of Patan town, but its general literacy is lower. The place of Kahnam as regards its urban literacy is lower than that of its general literacy. The presence of large number of low-type labourers in Dabhoi and Karjan towns tend to lower the urban literacy proportions in this tract.

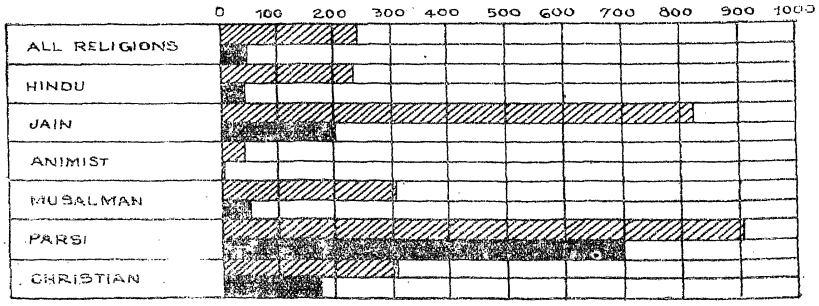
286. Literacy by Religion and Age—We shall now see how far literacy proportions vary among the different religions. Subsidiary Tables I and III give different aspects of the question. In Subsidiary Table I, the extent of literacy in the different religions is studied in the different age-periods. In Subsidiary Table III, the general average of literacy in each religion is compared to the different degrees attained in the different parts of the State.

LITERACY PER THOUSAND BY RELIGIONS (ALL AGES 5 AND OVER) — LITERACY PER MILLE AGE-PERIOD 15-20

Religions	Literate			Literate	
	Total	Male	Female	Male	Female
All Religions ..	147	240	47	354	105
Parsi	789	909	699	991	888
Hindu Arya ..	564	735	289	887	526
Jain	515	820	204	935	154
Christian ..	249	310	178	526	328
Musalman ..	183	309	48	424	109
Hindu	142	234	42	354	100
Animist ..	20	37	3	76	9

The Hindus forming the predominant majority in the State, the absolute numbers of literates in any other religion except probably Musalmans and Jains are so small as hardly to effect the ratios for the whole State. In the order of literacy amongst religions, Hinduism and Animism take the two lowest places. The Animists show the most dismal results in education in spite of all that has been done for them. Only 20 Animists in a thousand are literate; only 76 Animist males and 9

DIAGRAM SHOWING THE NUMBER OF PERSONS AGED 5 & OVER PER 1000 IN EACH RELIGION WHO ARE LITERATE



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females per mille, in the age-period 15-20, testify to the fact that these people have little profited by the decade's educational activity. The Hindus have 124 literates among a thousand of their number. The Musalman unlike his *confrere* in British India is in this State better off educationally than his Hindu brother; and in this respect, in both the sexes is this superiority seen. In the age-period 15-20 the Hindu has only 354 literate males and 100 literate females to the Musalman's 424 and 109. There is no doubt that the Musalman takes greater advantage of the local educational machinery at least in the primary stages of vernacular instruction than the Hindu does. Of course the Hindu is an amorphous community within whose ample folds are included Hinduised aborigines who differ little from their Animist congeners, and the untouchable classes to whom compulsory education has meant little beyond an irksome nuisance. The low level of education in these not inconsiderable portions of the Hindu community helps to bring down the ratio for the whole. On the other hand, to the representative Musalman communities in the State, education is either a necessity or a tradition. The Saiyad has a tradition of learning with him. To the Vohora, Khoja, Memon, and the rest of the Baroda State Musalmans generally education is more of a social necessity than amongst Hindus, as a preliminary to industries or trade in which they are mostly engaged. The typically illiterate classes that loom so largely in the Musalman total in other provinces like the Jolahas are not present in large numbers amongst the Musalmans of this State. The Christian ratio in literacy is an undoubted tribute to missionary enterprise in educational work. The main forms of their activity in this direction as well as in their normal work of conversion have been detailed in the Chapter on Religion. It will suffice here to point out that even when we separate the Indian Christians proper from the Christian total, the ratios are not seriously diminished thereby. Indian Christians are literate to the extent of 232 persons per mille of all ages 5 and over, and of 515 males and 323 females per mille of each sex in the age-period of 15 to 20. The Hindu Aryas are a small community of 645 persons. They are a reforming sect and have shewn zeal in social reform and the education and enfranchisement of women. They have 564 literates per mille amongst them. Parsis and Jains head the list in literacy. Parsis have almost general literacy amongst their adolescent and adult population in either sex and the figures for the age-period 15-20, show that the community is about equally anxious for the education of their girls as of their boys. Not so with the Jains. A race of traders, they seem to take a very utilitarian view of education. For every female that is literate amongst them, there are more than 4 literate males; and even in the 15-20 group, only 45 per cent. girls are educated, while amongst males the literates constitute 94 per cent. This sex-disparity in education does of course persist in all religions, except the Parsis and Christians. Amongst the Hindu Aryas, this disparity may be explained by late conversions from orthodoxy.

287. Literacy by Religion and Locality—As the Hindus form the vast majority of the State population one would expect that this community would set the standard and govern the literacy ratios for the whole State. But this statement requires qualification in several places. In South Gujarat, the large Animist population who form over 40 per cent. of the total number of inhabitants of that division, have so low a literacy that they affect the general ratios a good deal. In the City, the Hindus show a very high proportion of 58 per cent. literates amongst males. The general literacy in the City is lower for males on account of the Musalmans who have here a lower proportion of literate males than Hindus. In all other parts of the State the Musalmans beat the Hindus however. In North Gujarat and Kathiawad, the Jains are in great strength comparatively. Their own literacy is high, and the Musalmans also have a respectable average. As a result the general proportion of literacy in these divisions is higher than the Hindu ratio.

Natural Division	Hindu Literacy per 1000 (5 and over)		Total literacy per mille (5 and over)	
	Male	Female	Male	Female
State ..	234	42	240	47
City ..	578	207	562	213
Central ..	251	44	256	44
Northern ..	159	21	184	26
Southern ..	374	54	245	50
Kathiawad	248	59	264	63

The majority of Indian Christians are to be found in Central Gujarat division

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INDIAN CHRISTIAN LITERACY IN CENTRAL GUJARAT

Religion or Caste	Literacy per mille (5 and over)	
	Male	Female
Christian ..	210	123
Koli ..	80	8
Dhed ..	81	10
Chamar ..	50	3
Nayakda ..	52	6

and here their literacy ratios are the lowest. But when we consider the ranks from whom they are recruited, we realise the enormous advance which under missionary influence has been accomplished among the converts. The margin gives comparative ratios for Dheds and certain other tribes and castes from whom presumably the majority of converts are drawn ; with these proportions, the figures for Christians in Central Gujarat (excluding the City) are also compared. Europeans and Anglo-Indians are very few in that division; their exclusion would mean little alteration to the figures ; so the proportions given in the marginal table may be taken as for Indian Christians. These show what a great improvement their conversion has meant to them. In Baroda City, the Christian literates among males are 58 per cent. and female literates number 45 per cent. These high ratios are in a great measure due to the presence of Europeans and Anglo-Indians.

The Parsis have a general average of 909 literate males and 699 literate females per mille of each sex in the State. The majority of Parsis is found in South Gujarat, and there, as may be expected, the literacy proportions for this community are a little lower than the above figures. In Baroda City where the Parsis belong mostly to the official class or good social positions, the literacy is almost complete, the figures being 963 males and 937 females. The Musalmans, as pointed out already, show a lower ratio than Hindus in Baroda City only but even then they have a literacy of 41 per cent. for males and 15 per cent. for females. The literacy for Musalman males in South Gujarat is even higher than the city figures—namely 43 per cent. The Baroda City Jains show the highest proportions in literacy amongst their community in the State—with 925 males and 494 females literate per mille. The Jains in South Gujarat show the next best results with 877 males and 240 females literate per mille.

288. Literacy among Castes : Males—The variations in the number of educated persons can now be studied in reference to certain representative castes and tribes. The castes selected for purposes of literacy are the same as those chosen for Imperial Table XIV. In Chapter V, the Subsidiary Tables IV and IV-A are prepared by regrouping the castes according to their cultural and occupational differences. For Age and Civil Condition, concerned as they are with deep-rooted social customs that are slow to change—like fertility, marriage-age and so on, broad social groupings are enough to bring out the main tendencies. But in regard to education which is a far more dynamic and urgent business, a more individual treatment of castes has been deemed necessary. The variations amongst individual castes within a broad social group, like the Twiceborn, the Agriculturists, etc., are often times very wide and sharply contrasted. That is the main reason why the alphabetical treatment of castes in the Imperial Table IX has been retained in the Subsidiary Table VI. In this paragraph a marginal statement is given wherein the castes showing the highest proportions in male literacy are arranged in order. The question of female literacy in these castes will be considered separately.

CASTES WHICH HAVE A MINIMUM MASCULINE LITERACY OF 500 PER MILLE

Order according to male literacy	Name of Caste	Number literate per mille of		Order according to general literacy
		Males (5 and over)	Total population (5 and over)	
1	Prabhu	842	665	1
2	Deshastha Brahman ..	838	587	2
3	Shrimali Jain	817	518	7
4	Modh Vania (Hindu) ..	816	569	3
5	Shrimali Vania (Hindu) ..	802	545	5
6	Lad Vania (Hindu) ..	791	505	8
7	Vania Khadayata	776	521	6
8	Nagar Brahman	772	552	4
9	Disawal Vania (Hindu) ..	769	504	9
10	Anawala Brahman ..	678	457	10
11	Bhavsar	674	376	14
12	Soni	671	412	11
13	Luhana	665	382	13
14	Audich Brahman	644	394	12
15	Mewada ,, ...	604	359	16
16	Ghanchi	548	308	17
17	Maratha Kshatriya ..	545	368	15

The marginally noted seventeen* castes have at least half of their male popu-

* There are a few other castes—which are not found in large numbers in this State—which would also find a place in the above list, *e.g.*, Kokanastha and Jambu Brahmans, Shenvis, Brahmakshatris and Kayasthas.

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lation literate. It is significant that while general literacy amongst Musalmans is higher than amongst Hindus, no individual Musalman caste finds a place in the marginal list. The Vohoras show the highest literacy amongst them with 468 males and 95 females literate per mille. The Indian Christian ranks far below the communities included in the list with 294 literate males per thousand. The Prabhu or the Writer caste, here as elsewhere leads in literacy. The Brahmans generally give way before them and the Vanias. The Deshastha Brahman in this State is a small and limited class mostly engaged in government employment : and they have therefore always had very high literacy proportions. In 1911, the proportion of masculine literacy among them was 727 (calculated on the total population) while in the Bombay Presidency, the proportion in that year was 615 per mille for this caste. Amongst Gujarat Brahmans, the Nagars who stand eighth in male literacy and fourth in general literacy are the most advanced community. The Tapodhans are perhaps the most backward class amongst Brahmans.

The consideration of these figures confirms the general impression that communities engaged in trade, commerce and the learned professions, have the largest proportion of literates. These castes have taken advantage of compulsory education to improve their literacy. On the other hand Agriculture has certainly a very retarding influence on letters, for Lewa Kanbis, the most progressive amongst the agriculturists have 41 per cent. of their males and only 8 per cent. of their females able to read and write. The Military and Dominant groups are generally backward in education, but the local Maratha under the inspiration of the State Ruling family has shewn praiseworthy zeal in this regard. 368 per mille of their population are literate. Of the Maratha males nearly 55 per cent. are able to read and write. The literacy figures also disclose remarkable progress amongst certain artisan groups - Bhavsars, Sonis and Ghanchis. Being mostly engaged in arts and crafts, they are urban communities and as such have early come under the influence of education. As a result of their progress in education, it is not surprising that they should attempt to better their social status by setting up claims to belonging to higher castes. The Bhavsars have such tribal surnames as Bhatte, Chohan, Rathod and Parmar, to which they point as evidences of Rajput origin. Amongst the Sonis, certain sections like the Gujjar, Shrimali, Mewada and Maru claim kinship with Vanias. The Tragad Sonis even claim descent from a Brahman ancestress. Their progress in education and wealth is helping them to win a social position similar to the Vanias. Certain sections of the Ghanchis have Rajput tribal surnames. The Modh Ghanchis form a large and socially superior section amongst them. They were originally Modh Vanias but having taken to making and selling oil are now considered to have fallen from grace. The Modh Champaneri sect, it is true, have now more or less given up their connection with oil—at least the making of it— and actually petitioned to be classed under Vanias as a separate community. The Luhanas also as an enterprising trading community have a high proportion of literacy amongst their males. The Luhanas have undoubted kinship with Rathod Rajputs ; but the Gujarat groups amongst them have now so entirely Vaishnavised themselves that there is little difference at present in their general standards of life and comfort from the Gujarati Vanias.

But the caste from which all these aspiring communities are ambitious of tracing their origin is itself indifferent to the acquisition of knowledge. The Rajputs, though they have progressed in education, still show only 13 per cent. of their total population as being literate. Only 23 males and 3 females in a hundred among them are able to read and write. But I suspect that the Rajput totals on which these literacy proportions are calculated are inflated by the inclusion of Barias and Kolis who have passed themselves off as Rajputs.

At the other end of the scale are the vast mass of backward Kanbis (the Anjanas), the large miscellaneous crowd of Hinduised aborigines and the "untouchable" classes, whom the compulsory provisions have not yet been successful in making literate. The Anjana Kanbi has only 14 per cent. males literate. The literate males amongst the Koli form only 8 per cent. The Dhed* percentage is a little higher by a point. It is surprising that the Bhangi caste (of scavengers and sweepers) with 50 literate males per thousand is not quite at the bottom of the list. The Bharvad with 36 literate males per mille, the Vagher with 30, the Vaghri with 26 and the Rabari with 21 share that dismal honour.

* In regard to these Dheds, and other untouchable classes generally, it is interesting to note that the State maintains 228 separate institutions. The total number in 1920, of Antyajas (untouchables) reading in these and in ordinary Gujarati primary schools was 11,735 children or roughly 7 per cent. of the total strength of these castes.

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Amongst the forest tribes, the Hinduised sections are more literate than their Animist brethren. The Hindu Chodhra has 161 literate males per mille, while the Animist section has only 68. The Dhodias have similarly 101 and 85 for their Hindu and Animist sections respectively.

289. Literacy amongst Castes: Females—A truer indication of the varying zeal of different communities in regard to education is afforded by the literacy figures for females. Exigencies of business may make, in most Vania castes, an elementary knowledge of letters an essential requisite for a boy. But only in those castes, where female literacy is high, can it be said that there is genuine desire for enlightenment. A statement is appended in the margin which arranges the different castes according as they have a minimum of female literacy of 100 per mille. Here again the Musalmans are conspicuous by their absence. Not one Musalman caste—not even the Vohora or the Saiyad—has so many as 100 literate females per thousand of that sex. Indian Christians with a female literacy of 159 per mille take rank a little above the Marathas. Prabhus and Nagar Brahmans are amongst the few communities in the State amongst whom women approach something like equality with the men in point of literacy.

CASTES WHICH HAVE AT LEAST A RATIO OF 100 FEMALE LITERATES PER THOUSAND

Name of Caste	Female literates per mille (5 and over)	Order according to Female literacy	Order according to general literacy
1	2	3	4
Prabhu	460	1	1
Nagar Brahman	338	2	4
Deshastha Brahman	312	3	2
Modh Vania (Hindu)	289	4	3
Shrimali Vania (Hindu) ..	266	5	5
Disawal Vania (Hindu) ..	241	6	9
Shrimali Vania (Jain) ..	220	7	7
Lad Vania (Hindu)	213	8	8
Anavala Brahman	207	9	10
Khadayata Vania (Hindu) ..	186	10	6
Maratha Kshatriya	157	11	15
Audich Brahman	136	12	12
Soni	136	12	11
Luhana	103	13	13

290. Literacy by Languages and Communities—The distribution of literacy by religions and castes has now been considered. It is of great interest according to present day tendencies to find out how far literacy is prevalent amongst broad communal groups in the State. The old division into castes and religions is now giving place in modern educated thought to broad provincial groups or types like Gujaratis, Bengalis, and Deccanis (or Marathas—as all the Marathi speaking groups are beginning to call themselves). In this State we are concerned for the most part with Gujaratis and Deccanis, *i.e.*, those who speak the Gujarati and the Marathi languages. Together they make up to 90 per cent. of the population. From State Table XII, we can see how far these two communities are literate in their own respective vernaculars, and secondly how far they are literate at all. The two things as will presently appear are somewhat different. As the language table (Imperial Table X) is not compiled by age-groups, the literacy proportions have to be calculated in their case on the total population returned in each language, and not on Gujarati or Marathi speakers aged 5 and over. On this basis 13 per cent. of the Gujaratis and 40 per cent. of the Deccanis are able to read and write in this State. The margin gives the proportions by sexes separately. The Deccanis are an immigrant class mostly in quest of government employment where literacy is an essential requisite, and that is why their literacy is high. In the second place, the Maratha caste among them has been encouraged with scholarships and free education to take to learning. As a result, as pointed out in the preceding paragraph, their progress in education has been remarkably rapid compared to the state of things amongst their brethren in the Deccan. From the Imperial Table IX of the Bombay Presidency Census it appears that the Marathas of the Deccan have only a literacy of 66 per mille among males, and 3 per mille among females, aged 5 and over.

Name of group	Number per mille literate (in all languages.)		
	Total	Male	Female
Gujarati speakers ..	129	214	40
Marathi speakers ..	404	592	192

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Coming to literacy by language, we see the proportions working out a little differently. Most Gujarati literates are literate in their own vernacular, but the State Table XII shows that there are 1,385 male and 349 female literates, amongst Deccanis, who, although they have recorded Marathi as their spoken language, are not able to read and write in that language. The interaction of languages will be considered in the next chapter, but in the meanwhile, this circumstance has to be stated in order to account for the discrepancy in figures. Subsidiary Table X gives the ratios for each group of those who are literate in their own vernaculars. The Gujarati ratios do not differ much from those shown in the marginal table above, but amongst the Deccanis, 51 per cent. males and 17 per cent. females are literate in Marathi, showing that about 8 per cent. of males and 2 per cent. of females amongst them are literate, not in their vernacular, but in other languages. In the margin a small statement is appended in which the varying distribution of languages and literacy is studied. Marathi speakers although they constitute hardly 2 per cent. of the population contribute much more than their strength to the literacy totals. There are among the Deccanis twice as many male and more than three times as many female, literates proportionate to their strength in the community.

Language	Number per cent. who		
	Speak it	Are literate in it	
		Male	Female
Gujarati ..	88	89	88
Marathi ..	1·6	3·8	6

291. Progress of education by Religions and Castes—The general progress of education in the State will be presently studied. But in the meanwhile, the proportional figures for the different religions in the age-period 15-20 may be studied for two censuses to show how far in each of the two decades since 1901, the adherents of the different religions have availed themselves of the educational facilities. The marginal table gives the comparative figures of the two censuses by sex for the age-period of 15-20. The average schooling period is 5 years, so the population returned at that age-period in any census year may be rightly assumed to have had the full advantage of schooling in the preceding ten years. From this point of view, it is gratifying to find that the progress in education of girls, in which there was a very great scope for improvement, in all the main religions has been very rapid indeed. Amongst Hindus and Musalmans the proportionate strength of girls literate in this period is over three times now than ten years ago. With Jains it is nearly so. Parsis have now only 112 females illiterate per thousand of those ages against 140 in 1911. Even the Animists have advanced their humble ratio from 2 to 9 in the ten years. Masculine literacy also shows large increases in all the main religions.

Religion	Proportion of Literates aged 15-20 per mille in			
	1911		1921	
	Male	Female	Male	Female
Hindu	247	33	354	100
Jain	870	163	935	454
Animist	24	2	76	9
Musalman	313	33	424	109
Parsi	959	860	991	881
Indian Christian ..	334	345	515	323
Hindu Arya ..	755	250	887	526

Amongst the castes, it is noteworthy that female proportions in literacy have almost everywhere increased since 1911. In some castes like Bhavsar, Brahman, Ghanchi, Kanbi (Lewa and Kadwa), Kumbhar, Luhar, Maratha Kshatriya, Rajput, Soni, Sutar, Vania (both Jain and Hindu), Memon, Pathan, Shaikh and Vohora—the proportions have more than doubled or even trebled and quadrupled in the decade. Male literacy has also increased but less rapidly in almost all the castes. Anavala Brahmans, Anjana Kanbis, Sonis, Disawal and Modh Vanias, Shrimali Jains and Memons are among the few that show slight decreases since 1911. The decrease in the Vania castes and amongst Memons must be due to emigration of many of their enterprising youths to foreign parts for business.

292. Effect of Mass Education on Social Differentiation—The comparison of these figures forces one or two impressions rather strongly on the mind in regard to the effect of mass education on social differentiation. One social aspect of general education has been already referred. In proportion as castes, lower in the social scale, take to education, their mental orbit is undoubtedly enlarged and their ambition to rise higher socially grows correspondingly. But there are other effects of mass education which have influenced profoundly the division of

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classes in the community. In the first place, the educated minority in the different castes—it forms a majority as we have seen in some castes—seem to coalesce in general conditions and standards of living. The so-called "bhadralok"—gentle-folk—class in Bengal is well-known. It is a cosmopolitan community recruited from many sources and is clearly marked off from the general population by certain well-defined characteristics—accent, distaste for manual labour, etc. If the educated sections of the different castes have not coalesced here to so marked an extent as in Bengal, there is no doubt that strong tendencies are operative in that direction. In Chapters IX and XII we shall see how far these levelling influences of the school have interacted on the dialectical as well as occupational differences amongst the people. In the meantime the tendency is here broadly stated. There is one other tendency which is rather special to Baroda on account of its experiment in compulsory education. The measure of its success from the point of view of literacy will be presently tested. In the meantime it may be stated without dispute that on the different castes and classes, its efficacy has been very unequally distributed. While it has no doubt contributed to a large increase in general literacy, only the lettered classes and the artisans and the superior agriculturists have profited directly by it. The rates of increase of literacy amongst these sections have been gratifyingly large; while amongst Kolis, Rabaris, Dheds, Bhangis and the Animist tribes they have ruled very disappointingly low. The result has been that between the communities high in the literacy scale and those at the bottom, there is coming into being almost as wide a chasm of intellectual differentiation as between the European and the lower class Indian. Whatever other benefits may be credited to compulsory education, this must be laid at its door that it has helped to enforce and even widen the already existing cleavage between the classes in the community.

293. Variations in degree of Literacy in the Population—It is not possible to find from the broad distribution of literacy by religion exactly how literacy varies among the different strata of population. But Imperial Table IX does help us to a great extent in this matter. The samples taken for that table make up to about 92 per cent. of the total population. Proportions based on that table should be true also for the total population. On this basis therefore the marginal table has been prepared. It appears from this table that high male literacy only obtains amongst 11 per cent. of the population. With 45 per cent. of the population, even the highest male literacy is below 100 per mille.

Proportion of Population (aged 5 and over) with a male literacy of	
500 per mille and over ..	10·6
Between 100 and 500 per mille ..	44·4
Below 100 per mille ..	45·0

294. English Education by Religion, Caste and Locality—Having considered the figures of general literacy, let us see how the situation is in regard to literacy in the English language. In the State 85 per cent. per 10,000 aged 5 and over are able to read and write in English. Taking the sexes separately the proportions are 153 for males, and 10 for females, per 10 mille aged 5 and over. Subsidiary Table I (last columns) gives the proportions per mille of the literates in English among the different religions. The Brahmos are a very small community of 35 persons and are therefore not included in this table. But 20, out of their 31 persons aged 5 and over, are literate in English, including 9 women. The Parsis have 330 men, and 46 women, literate per mille of their strength in each sex aged 5 and over. The Hindu Aryas have the next highest proportion, 160 and 28. Indian Christians follow with 56 and 52. English Literacy amongst females of other religions exists only to an insignificant extent. Only 15 in 10,000 amongst Jains, 5 in 10,000 amongst Hindus and an equal ratio amongst Musalmans (of all ages 5 and over) represent the progress of English education among the females in these communities. In absolute figures, of the total of 887 female literates in English, 409 or 46 per cent. are Hindus, 181 or 20 per cent. are Parsis and 151 or 17 per cent. are Indian Christians. Of the rest, 66 are Europeans and Anglo-Indians, 32 are Musalmans, 29 are Jains, 9 are Brahmos and 14 are others (Hindu Aryas and Jews). Amongst Jain males, the English literates number 49 per mille ; Hindu males have a higher proportion of English literates than Musalman. English education is almost non-existent amongst Animists, there being only 7 males literate in English amongst them.

Coming to castes, male literacy in English exists to a large extent amongst Prabhus (413 per mille), Deshasthas and Nagar Brahmans (287 and 236 per mille), Anavala Brahmans, Modh and Lad Vanias (between 100 and 200 per mille). Brahmakshatris, Kayasthas and Shenvis are other small communities with simi-

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larly high proportions of English literacy. Shrimali Hindus, Disawal and Khadayata Vanias, and Maratha Kshatriyas have a ratio between 80 to 100 per mille of males literate in English. Audich and Mewada Brahmans, Shrimali Jains and Luhanas follow with 30 to 80 per mille literate in English among males. The old reproach that Vania castes did not take much interest in English education is becoming less true with the passage of time. Most of the representative Vania castes take a good place in regard to English education. The artisan classes like Bhavsar, Soni and Ghanchi—which have a high ratio in general literacy—are still backward in English education. Amongst the Musalmans, even the advanced communities like Vohoras, Khojas, Saiyads and Memons are very backward in this respect. Memons have only one per 1,000 literate male in English. The Saiyads have only 20 per 1,000. Female literacy in English amongst Hindu and Musalman castes is still in its infancy. Of the 409 Hindu female literates in English, 60 are Marathas, 55 are Prabhus, 47 are Nagars, 27 are Deshasthas, 71 are other Brahmans, 35 are Vanias and 114 belong to other castes. Of the 32 Musalman female literates in English, 20 belong to the Shaikh, Vohora and Pathan communities. These communities are therefore the only castes that take any advantage of English education for their girls.

The question of English education by locality does not require detailed treatment. Of the total number of 15,660 literates in the State, the bulk, or 82 per cent. belong to urban areas. 6,019 or 38 per cent. reside in the City. North Gujarat absorbs the next largest number, namely, 3,052 or 19 per cent. South Gujarat has 2,722 or 17 per cent. For its population, South Gujarat (with its large number of Parsi residents) has next to the city the largest proportion of English literates (174 males per 10,000). In the age-period 15-20, the City (with 265 per mille literate male) and South Gujarat (with 46 per mille literate male) have the largest proportions. More than half of the female literates in English in the State are found in the City. In South Gujarat principally in Navsari, Gandevi and Bilimora towns, there are 144. In Central Gujarat exclusive of the City, there are 160 female literates in English. Of these 99 are Christians. These last belong presumably to the American Mission Schools in the vicinity of the capital which though not formally belonging to the City area is still included within its suburbs. In North Gujarat, Patan and Mehsana towns absorb most of the female literates in English. It may be said therefore that except in Baroda City and suburbs and Navsari, Gandevi and Bilimora towns, women able to read and write English are practically non-existent.

295. English Education in the City—In the City including the Camp 71 persons per mille aged 5 and over are literate in English, 118 males and 13 females per thousand of each sex of these ages profess to know English in the City. This proportion is not commensurate with the leading place which the City has taken in point of general literacy in comparison with other Indian cities. The margin collects the figures for several other cities. Wherever there is a large population of English race, there the proportions of literacy in English are higher, but comparing with cities with a like race composition Baroda City is found to lead. Surat and Ahmedabad have much lower ratios than Baroda.

Name of City	Proportion of English literates per mille aged 5 and over
Calcutta ..	206
Dacca ..	141
Rangoon ..	127
Bangalore ..	125
Poona ..	105
Madras ..	104
Bombay ..	94
Karachi ..	78
Baroda City ..	**71**
Delhi ..	54
Surat ..	53
Ahmedabad ..	34

296. Figures regarding the Partially Literate—Besides the literates, the Census disclosed 18,836 persons in the State who are only able to read but not write. Of these 13,793 are males and 5,043 are females. The marginal statement gives the proportionate figures per age-periods. The number of males aged 7 and over who are able to read only is only 150 per 10 mille. The number of such females is 60. 42 per cent. of the total of this class belong to ages under 15. 25 per cent. are 30 years of age and over. The majority of these partially literate are either learners or old persons. The signifi-

Age Periods	Proportion of persons able to read only to 10,000 persons aged 5 and over		
	Total	Male	Female
5—7 ..	17	22	12
7—10 ..	111	150	65
10—15 ..	225	277	168
15—20 ..	168	210	118
20 and over	72	114	28

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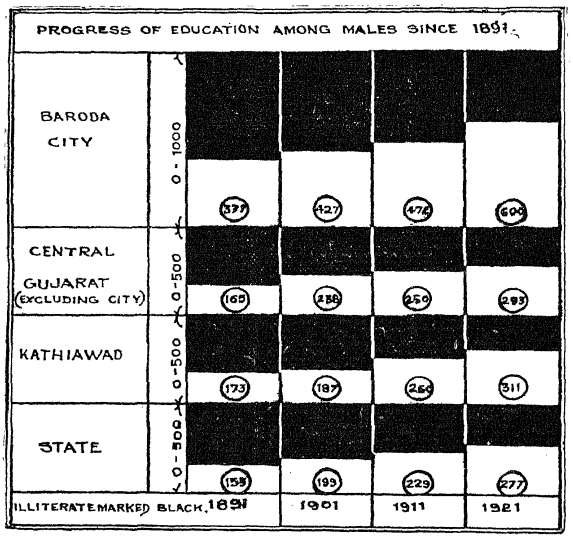
cance of these figures will be studied in connection with variations in literacy, amongst persons under 20, and also in reference to the question how far literacy once acquired is retained.

297. Progress in General Literacy since 1881—For reasons shewn at the outset, it is difficult to compare the results of the different censuses prior to 1901. But if, as is recommended by the Census Commissioner's Note, we take the "learners" aged 15 and over for 1891 and 1881 and add them to the total of literates of those years on the presumption that these would have been regarded as literates if this intermediate category was not there, we shall have a very fair basis of comparison with the figures of 1881 and 1891. Subsidiary Table V does this and gives the proportions for literacy since 1881. For earlier ages than 15, it adopts the American plan and excludes all ages below 10 in the calculation. For 1881 it appears that the age-periods selected were 0-6, 6-15 and 15 and over. For this reason, the literacy proportions for 1881 have been calculated after excluding all ages below 6.

Since 1891, the proportion of male literates aged 10 and over per mille has increased from 107 to 277 in the State. Female literates have multiplied more than eight times proportionately to the female population since 1891. The increase has been most rapid in the City. There the literate males (aged 10 and over) have increased from 377 in 1891 to 600, per mille, in 1921. The literate females per mille for all ages 10 and over have increased in the City more than eightfold, from 25 in 1891 to 218 in the latest census. In the age-period, 15-20 in the City literate males now number 766 to the thousand, as against only 449 in 1901; female literates of that age constitute 370 per mille, while their strength twenty years ago was only 49. The accompanying diagram illustrates the general progress in the State in masculine literacy, as also the special developments in the City and the Central and Kathiawad Divisions.



The progress of literacy can also be gauged by comparing absolute figures. In the marginal table, the variations in the number of literates since 1901 are studied along with the variation in population, taking the figures of 1901 as 100. Everywhere we see that the increase in literacy is very much more rapid than the rise in population. In the City the population has decreased by 9 per cent. while literates have increased by 59 per cent. in the last 20 years. The largest rate of increase is in Kathiawad, where the population has only increased by 3 per cent. but the literates have grown by 82. The general rate of increase in literacy since 1911 seems also from the table to be more rapid than between 1901 and 1911.

Name of Division	1901		1911		1921	
	Population	Literates	Population	Literates	Population	Literates
State	100	100	104	119	109	159
City	100	100	96	112	91	159
Central Gujarat (exclusive of city.)	100	100	109	115	113	142
North Gujarat ..	100	100	100	123	108	171
South Gujarat ..	100	100	112	122	113	153
Kathiawad ..	100	100	103	151	103	182

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298. Variation in Literacy for Ages below 20 since 1901—The marginal statement shows the variations in literacy proportions for the age-periods 5-10, 10-15 and 15-20 separately for the last three censuses, and compares them with the variations in population in these age-periods since 1901.

Age Period	Variation per cent 1901-11		Variation per cent 1911-21	
	in Population	in Literacy	in Population	in Literacy
5—10 ..	— 8·5	+10	+32·5	+ 2·6
10—15 ..	—28·4	+42	+42·5	+ 51
15—20 ..	—10·3	+21	— 1·9	+86·2

In the age-periods 15-20, the largest increases in literacy are recorded in the last 20 years. Between 1901-11, the total population in this age-period decreased by 10 per cent. and yet the literates in this group increased by 21. In the next decade, the population between these ages continued almost stationary, but the literates increased by 86 per cent. Similar but lower rates of increase in literacy are apparent in the age-period 10-15. In the ten years after 1901, the population aged 10-15 declined by 28 per cent., but the literates amongst them increased by 42. In the next decade, the literates showed a higher rate of increase (51 per cent.) than the preceding decade ; but as the total population of this group also increased by 43 per cent. it cannot be said that the progress was greater in the last than in the first half of the twenty years under consideration.

In the age-period 5-10 the progress seems slow, especially during 1911-21. In 1911 the child population of this age was found to have declined by 8·5 per cent., but the literates increased by 10 per cent. In the next decade, the child population increased its total strength by 33 per cent. but the literates among them were only larger by 3 per cent. I can find two reasons for this slackening in the growth of education amongst the child population. About midway in the last decade, it was decided to raise the compulsory age from 6 (completed) to 7 (completed). In 1914-15 before this change, there were 31,587 children aged 7, and 4,821 aged 6, under instruction. In 1916-17, after the change was fully known, the corresponding figures were 10,557 and 475. As a matter of fact there is no doubt that the change in the age-limit led to an almost general withdrawal of children of early ages from school. Specially was this the case with girls. The disastrous years of 1917 and 1918 supervened and dislocated the educational machinery still further. All these causes combined to retard the growth of literacy amongst this group. There was another circumstance whose operation must be mentioned. As already pointed out, the creation of an intermediate class of "Able to read only" had the general effect of still further narrowing the definition of " Literate." This effect was particularly in evidence in regard to the child-population from 5-14. From the State Table XI we learn that there are 10 males and 4 females per mille, aged 5-10, who are able to read printed books only. The proportions by sex in the next age-group 10-15 of persons able to read only are 28 and 17 per mille. The persons able to read only in these two groups together form 42 per cent. of the total partially literate of all ages. I have no doubt that a good proportion of the persons entered as able to read only in these ages, would have been returned as literates if there was no such class.

299. Progress in English Education—Subsidiary Table IV also shows the progress of English education since 1891. In that year only 20 males and 1 female in 10,000 of each sex, aged 5 and over were literate in English. In 1901, the corresponding proportions were 59 and 2. In 1911, they rose to 104 for males and 5 for females.

An interesting indication of the measure of the decade's progress in English education is afforded by comparing the annual average of students sent up for, and passed in the different University Examinations with similar figures for 1911. The marginal statement does this for some of the examinations. The increase in the number of Secondary Schools, from 28 in 1911 to 41 in 1921 (*vide* Subsidiary Table VII) must have been the cause of the doubling of the number of matriculates. The College has also increased in popularity, as

Examinations	Average 1911-21		1910	
	Candidates		Candidates	
	Sent up	Passed	Sent up	Passed
Matriculation and School Final.	515	215	235	111
First year's course (including Preliminary Science.)	253	136	84	43
Intermediate Arts and Science.	140	78	55	39
B.A. (Pass and Honours)	122	70	25	16

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evidenced by the number of B. A.'s now annually turned out being more than four times as large as in 1910.

The number of candidates for Matriculation in the decade is 5,150. Another 5,000 may be estimated to have attained to the fifth and sixth standards in the decade. Roughly about 10,000 additional persons may be said to have been thus added to the 1911 total of literates in English. The census of 1921 disclosed an increase of only 5,919 amongst literates in English. Deducting deaths from the 1911 total of literates in English, we should get a higher figure for English literates than the census total. It must be presumed therefore that the losses through emigration are serious.

300. Comparison with Education Returns—Subsidiary Table VII gives the number of institutions and pupils according to the returns of the Education Department. The total number of institutions of all kinds have increased from 1,213 in 1901 to 2,797 in 1921. In 1911, the public institutions numbered 3,026 but their strength of pupils only totalled 185,477 in that year, against 198,816 boys and girls in 1921. The total number of scholars in 1901 was only 86,444. In 1891, there were only 521 institutions with 53,070 scholars. The increase in institutions since 1901 is 130·6 per cent; and the scholars have also increased by the same rate. The girls under instruction have increased from 14,428 in 1901 to 54,479 in 1911 and 61,865 in 1921. The increase in the last 20 years in girl scholars is 329 per cent. Male scholars increased from 77,016 to 130,998 in 1911 and 136,951 in 1921. The gross increase at the end of twenty years is 90 per cent. The students at the advanced stages of instruction (Secondary and Collegiate) have also increased largely. The College now contains 559 students (including 13 women). In 1901, it had only 236 scholars. Secondary schools have increased largely in numbers and strength. Against 17 Secondary schools with 2,287 students in 1901, we have now 41 with 8,205 scholars (including 258 girls). The special institutions including 5 training schools for teachers numbered 30 in 1921 with 2,602 boys and 137 girls attending.

The Primary Schools of the State which are the base of its educational pyramid numbered 2,698 (public and private) with 184,065 pupils (61,457 girls). The number of institutions shows decrease as already mentioned from the figures of 1911. About 1915-16, there was a searching inquest into the working of compulsory education and opinions were invited from all quarters. As a result, in 1916, it was decided among other changes to close inefficient schools which contained less than 30 pupils, to raise the compulsory age from 6 completed years of age to 7, stiffen further the standard of examinations to increase the facilities for giving training to teachers and generally to develop along intensive lines the programme of primary education. This intensive development is reflected in the improvement in efficiency of the teaching staff. The total number of trained teachers increased from 1,884 in 1915 to 3,095 in 1920.* The expenditure on Education has also gone on increasing from 8·5 lacs of rupees in 1901, to 14·06 in 1911 and 23·4 lacs in 1921. In 20 years the State budget on education has nearly trebled. It now forms over 12 per cent. of the annual revenue.

The scrapping of inefficient schools was in a manner helped on by the disastrous events of the last half of the decade. Plague, influenza and famines combined to dislocate the educational machinery during this period, particularly in the years 1915, 1917 and 1918. Compulsion was suspended in the last two years. From September 1917 to the end of April 1918 the plague epidemic caused the closing of almost all schools for periods varying from two to six months. 1918 saw the widespread prevalence of influenza followed by a terrible famine and abnormally high prices. The former caused the temporary closing of all institutions for periods varying from two to four months; and the latter led to the suspension of the Compulsory Act until the beginning of 1919. A large number of schools particularly in Kathiawad and North Gujarat divisions had to be closed down in consequence. It was only in 1920, that it could be said that the compulsory provisions were restored to their normal operation. The Administration Report for 1919-20 has the following remarks: —

* The latest figures indicate that there are now 3,550 teachers trained (or undergoing training) as against 2,415 untrained teachers. The total sanctioned strength of the primary education establishment (teaching staff) is however 7,235. There are now therefore 1,270 vacancies owing to the closing of numerous schools as a result of famines and epidemics.

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"The very acute distress on account of high prices and epidemics reduced the strength of the Schools in a very large number of villages to vanishing point. Labour demanded, and received, extraordinarily high wages; and ignorant parents of the cultivating and labouring classes are naturally prone to withdraw their children from what they regard as unprofitable labour in the schools, in order that they may use them in profitable labour on works and in fields. Of late, there appears an increasing tendency on the part of the parents to send their boys to the English Schools. This has reduced the number of boys in the upper classes of the Vernacular Schools to an appreciable degree. The step taken by the Department to improve the attendance of schools by removing from School Registers and putting on separate lists the names of compulsory children who remained continuously absent for a long time regarding them as non-admitted, has considerably reduced the paper strength of School-going children."

But along with this scrapping went on an intensive development which helped the increase of literacy in the State. The first stages of the compulsory experiment were governed by the urgency of multiplying educational facilities all over the State in order to bring its provisions into effect: the majority of the seven thousand teachers were then untrained; and although from the point of view of attendance, the system may be said to have attained very satisfactory results, from the point of view of its effectiveness in enabling the school-going population to read and write, it was not nearly so satisfactory. The census of 1911 was taken five years after compulsion was extended all over the State. That is to say, a generation of children aged 5-15 must have passed through the full school-course; and in that census, only one male in four, and one female in 25, aged 15-20 were found to be literate. The real reason for this circumstance is that universal primary instruction can only count as a serious factor in the development of literacy, if the proportion of people under instruction at the effective stages is large compared to the total school going population. Going through the Baroda State Primary curriculum, one finds that it is only in the third standard that reading and writing and arithmetic begin to be effectively taught.

It is only those that have passed the third standard test and gone into the fourth that may be said to be the year's contribution to the volume of literacy. From this point of view, it is satisfactory to note, inspite of famine and epidemics and consequent shrinkage in the number of schools that there is a steady and growing improvement. The marginal statement gives the annual averages of children admitted to the 4th standard for the years 1910-12, 1913-16 and 1917-1920. There is now more than double the number of pupils added to the literate classes every year, than was the case ten years ago. The average annual number of pupils under instruction in the Primary Schools for the years 1917-20 was 202,102. The similar average for the years 1910-12 was 174,651. So the proportion of pupils admitted to the stages of effective instruction was 10·4 per cent. in 1917-20 while it was only 5·3 in 1910-12.

Year Periods	Annual average of pupils admitted to the 4th standard
1910—12 ..	9,269
1913—16 ..	14,052
1917—20 ..	21,032

301. Correlation with Education-returns by individual ages—A marginal table is given where the total population returned at individual ages from 5 to 15 is compared with literates, partially literates and learners. Figures in columns 2, 3, and 4 are compiled from the census, and those in column 5 have been obtained from the Education Department. The table is instructive as it shows that only 44 per cent. of learners at effective ages of instruction 10-15 are literate.

Year of completed age	Population returned in 1921	Number literate	Number able to Read only	Number returned learning	Proportion of literates to learning	Total of Columns 3 and 4 proportioned to Col. 5
1	2	3	4	5	6	7
5 ..	71,919	870	220	345	125	157
6 ..	54,779			349		
7 ..	55,818	8,616	1,858	10,312	13	16
8 ..	70,906			24,655		
9 ..	41,419			30,843		
10 ..	76,322	49,798	5,758	31,114	44	50
11 ..	33,149			27,848		
12 ..	70,949			26,772		
13 ..	39,228			18,165		
14 ..	35,781			8,302		
Total ..	550,262	59,284	7,836	178,705	33	38

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Taking both literate and partially literate together, the proportion is raised to only 50. Of course as has been indicated above, a great improvement towards intensive progress has set in, and had it not been for the unfortunate intervention of calamities, the change in the educational policy of the State would have led to even larger increases in literacy than what the census has disclosed.

The compulsory ages are 8—14 for boys and 8-12 for girls; these are current years. According to Census reckoning which regards only the completed years of life, the age-periods will be 7-13 and 7-11 respectively for boys and girls. Comparing the population returned at each age in these groups to the total of children at school for each sex separately, we find that out of a school-going population of 336,033 children of these compulsory ages (206,411 boys and 129,622 girls), only 156,439 or about 46 per cent. are enrolled in the attendance register. Among boys, the percentage of enrolment is higher than this, namely 53 per cent. The girls have a much lower ratio of 36 per cent. Allowing for inaccuracies of age-returns through which there has been undoubted heaping at age 5, it must be stated that about 40 per cent. of boys and 60 per cent. of girls of the compulsory ages escape instruction. In 1911, the area of superficial instruction was indeed much larger. Of a total of 2,917 inhabited towns and villages in that year, 2,015 had schools; and a good few of the remainder must have been served by schools in the neighbouring places. In 1921, on the other hand, out of a total of 2,950 inhabited towns and villages only 1,443 are actually supplied with schools. 300 other villages are served with schools in the neighbouring villages. 1,207 villages or 41 per cent. are now without educational facilities of any kind. From the figures supplied to Rao Bahadur Govindbhai in 1911, it appears that 164,211 pupils out of a total population of 213,630 of the compulsory ages were under instruction. This means a high proportion of 77 per cent. or allowing for inaccuracies for age about 80 per cent. But inspite of this high proportion—much higher than in 1921—the proportion of literates under 15 years of age to primary school pupils under 15 years of age was only 24·5 in 1911, while from the table attached to this paragraph, we find that such proportion in 1921 is 33. In 1901, the proportion of literates under 15 to pupils under primary instruction, of whatever age, was 38·8 per cent. Taking the total number of scholars under instructions, it will be also interesting to find out the proportion of literates under 20 years of age to them in successive censuses since 1901. The comparison with 1901 is rather misleading, because the number of scholars was then much less and the proportion of effective education was correspondingly higher than in the following census years when with the coming in of compulsion the number of scholars was suddenly forced up and the increase in the number of literates could not keep pace with them. But it is significant that since 1911, the proportion of literates to learners has gone up much higher ; the increase in the number of literates has been faster than that of scholars. The proportion of children who are being effectively educated to the total under instruction is now much larger than ever before and the chances of a further rise in literacy in the coming years are secure.

Year	Proportion of literates under 20 to 100 Scholars
1901 ..	63
1911 ..	38
1921 ..	50

302. Expected and Actual Literacy—It is possible to construct from the education returns a fairly accurate estimate of the number of literates that must have been added in the decade to the figures of 1911. By this means it is also possible to find out whether the census results either of 1911 or 1921 are accurate or otherwise. As we have pointed out above, the real test of literacy is the third standard examination. The yearly batches of children that pass this test and go up to the fourth standard are the annual contribution of the education department to the literate class in the State. It is difficult to imagine how else literacy can be increased. The chances, as well as the desire and the leisure for adult-education, are few indeed. The spectacle of large classes of adult illiterates devoting themselves to self-study and improvement is still remote from the Indian scene. The only class of persons from whom literates can be recruited is therefore those belonging to the ages 5-15; again almost the only avenue to the literacy fold is through the school. There is hardly any school in the State which is not within the purview of the education department; and instances of home education are rare. Therefore the statistics of the distribution of pupils by standards in the Recognised Schools may be accepted as the sole guide in this respect. The literacy figures of 1911 may be assumed to have included the batch of literacy-recruits who were admitted to the fourth standard in that year. The number of children admitted each year from 1912 to 1920 need only therefore be counted as so many additions to the ranks of lite-

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rates. These numbered 150,385 and presumably belonged to the healthy age-period 5-15. Applying a death-rate of 8 per mille per annum for 9 years we find the survivors of this group to be (150,385-10,828 or 139,557) children in 1921. Now the total number of literates in 1911 was 204,497 persons. These were presumably of all ages 5 and over. They were subjected in the following years like the rest of the population to a very heavy mortality. There was also the influence of emigration, which must have carried off a good many of our literate youths to other parts. Taking all these things into consideration, a deduction of 40 per mille per annum may be well applied to the literate total of 1911. The survivors in 1921 at this rate will be $204,497 \times (\cdot 960)^{10}$ or 136,256. Adding these survivors to the survivors amongst the literacy-recruits of the decade, we get a total of 275,813 as the estimate of literates expected on the census date of 1921. The actual figures are 272,418. The deficit, by this calculation, comes to 3,395. The number of those who are able to read only in the age-period 30 and over is found in this census to be 4,732. For a full explanation therefore we must seek further light. In the above calculation of deductions made in the literate total of 1911 we have only in view the operation of two factors—death and emigration. There is a possible third which we must not lose sight of. And this brings us to the consideration of the important question: how far literacy once acquired is retained.

303. How far Literacy once acquired is retained—In considering this question we must bear in mind the important bearing which occupations such as agriculture and social influences such as that of marriage have in deleting the traces of education in the later years of a man or a woman's life in this country. The three or four years at school soon become a faint memory. In the case of a girl unless she belongs to the lettered classes, her early withdrawal from schooling to matrimony often has a desiccating influence on whatever she has learnt from her teachers. She is swallowed up in her household duties and the claims of her growing family engross all her time and attention. With men of the agricultural classes—and especially in communities to whom learning is an irksome novelty—the results of schooling are soon apt to be effaced in the more urgent work of earning their livelihood from the soil. The hard labour which tilling entails is a drain upon their mental energy; the routine of their daily tasks and the dull greyness of their unremitting toil do little to remind them of their childhood's reading. Of course much has been done lately to improve their amenities. The importance of libraries as an adjunct to mass education has been amply recognised in this State. In the next paragraph we shall study the progress of the library movement . In the meanwhile let us see how far we can tell from figures that literacy tends to deteriorate with advancing years. For this census, we have, as already mentioned collected figures for literates aged 20-30 and also aged 30 and over. The literates in the age-group 10-20 in 1911 are now represented in the group 20-30 ; and the literates aged 20 and over of 1911 are now presumably 30 years old and over. From a general consideration of registered death-rates and the mortality rates as found by the State Life Table (*vide* Chapter V) and also of the social strata from which literates are drawn we shall assume an annual death rate of 15 per mille for the age-group 10-20 ; and 20 per mille for the ages 20 and over. Applying these death-rates, the survivors of the literates of the age-group 10-20 amount to 51,960 in 1921, and those of the age-group 20 and over are similarly reduced to 110,550 at the end of the decade. The literates aged 30 and over in 1921 are less than this last figure by about 1,509 persons. State Table X shows that there are 4,732 persons in the State able to read only but not write in the ages 30 and over. So the above deficit of 1,509 persons from the estimated number of literates aged 30 and over may be presumably included in the category of the partially literate. The age-period 10-20 is not so satisfactory from the point of view of this test as the next decennial group, because the former may be expected yet to contribute recruits to literacy, unlike the latter which is quite beyond the scope of instructional agencies. In 1911, in the age-group 10-20, there were 282,385 persons included under illiterate. Amongst these there must be thousands—at least one-third of potential literates who were likely to come under educational influences in the following decade. From these must have come the excess (of 11,073) of actual literates aged 20-30 over the estimate, plus the 3,410 persons who were returned as able to read only in that age-group.

Age period	1911	1921
10—20	60,435	
20—30		63,033
20 and over ..	135,264	
30 and over ..		109,041

On the whole the figures point to a state of things somewhat more satisfactory than what one would from *a priori* reasons be led to imagine. That is the

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general position in the State. But in tracts which have been particularly hard hit by famines and epidemics, leading to the closing of schools and practical suspension of the compulsory machinery for almost the whole of the last quinquennium, the consequence has been that the young population has been growing up in some villages without education even though their fathers had been literate. I have seen instances of this in my inspection of census books in Savli, Amreli, and Okhamandal Mahals. I wish I could test this statement with the help of figures, but I have no means of doing so; however it is a well known fact that in Kathiawad, Chorashi and the Western dry belt of North Gujarat, the closing of schools on account of abnormal circumstances of the last half of the decade was the most frequent. It would have been very useful to take the figures of badly hit talukas by way of sampling, but I am afraid literacy figures of the requisite age-periods by talukas are not available for 1911. We have therefore to take by divisions. Taking only Kathiawad and Central Gujarat (exclusive of the City) we find that the number of literates aged 20-30 in 1921, who should have ordinarily shewn a higher figure than the literates aged 10-20 in 1911 is actually less. The margin gives the absolute figures by age-periods. The figures for Central Gujarat are not so convincing, as the adverse balance in Chorashi must have been made up in the more advanced areas. But the decline in Kathiawad is particularly noteworthy. Applying the usual death-rate of 15 per mille to the 1911 literates aged 10-20, we get as their survivors 6,412 persons. So not only there have been no additions from the potentially literate of this group in this decade, but there has been an actual decline. Part of this decline is due no doubt to the falling off of many persons from the rank of literates into the class of the partially literate, as the State Table shows there are 391 such persons aged 20-30 in the census, but an additional factor in this decline has been no doubt the closing of numerous schools resulting in many cases amongst adolescent groups, who would have had schooling under normal circumstances, growing to manhood without education.

Age Period	Literates in			
	1911		1921	
	Kathiawad	Central Gujarat	Kathiawad	Central Gujarat
10—20	7,458	19,572	6,129	19,471
20—30	12,835	43,659	9,369	34,531
20 and over ..				
30 and over ..				

The general literacy results in these hard hit areas have been also affected, if I mistake not, by migration. In regard to migration it must be remembered that this State generally exchanges her literate emigrants for illiterate immigrants from other territories. There has been indeed gain in population through immigration in the last decade, but I doubt whether this gain has contributed any additions to our literate total. The gain through migration which we reckoned to have happened in Kathiawad and Northern Divisions could not have added to the literates of these areas.

304. The Library Movement—In the preceding paragraph it has been stated that the general position in regard to the continuance of literacy is fairly satisfactory. The main contributory to this result is no doubt the net work of libraries with which the State is covered. The Report of 1911 mentioned the progress that had been then made since 1901; and it also sketched the outlines of a comprehensive scheme of establishing free libraries throughout the State which was just then being brought under operation. A large Central Library was opened at the capital, district and taluka headquarters towns and eventually all towns and large villages were to be provided with libraries. Libraries were classed as village, town or *prant* according as they were situated in a village, town or *prant* headquarters. The condition laid down for the founding of a library in a particular town or village was that sums not exceeding Rs. 50, Rs. 300, or Rs. 700, according to the class of library were to be raised by the people, whereupon the library could be established and the Government and Local Boards guaranteed equivalent sums each towards the upkeep of the institution. The provision of buildings, and also of books, to such libraries was also on this basis of equal sharing between the people of the place, the Local Board and the Government. The people of the State has not been slow to take advantage of these very liberal facilities. Since 1911, the growth of the library movement has been little short of

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phenomenal. The marginal statement shows the main heads of the development since 1911. It must be mentioned that the figures regarding books in Reading Rooms are not available. The average number of books per library is now 627; in 1911-12 it was 566 ; so that not only the extent of libraries has become widely enlarged, but also the size of libraries has increased. The shadow of epidemics and famine seems to have passed over the libraries also, for there has been a shrinkage in the number of readers since 1917. The total number of readers now forms 23 per cent. of the literates in the State. In 1911, they constituted 18 per cent. of the literates of that date. The Central Library consists of the Main Library, Ladies' and Children's sections, a branch Mahila library for the exclusive use of women and three Ladies' Clubs. The total stock of books in its charge is now 88,763 against 28,653 ten years ago. The number of readers using the library in its several sections is 3,372. One of the most successful branches of its work is the Children's Room, where there are facilities for games and picture shows. It is largely patronized by the children of the City and is altogether a valuable adjunct of the educational machinery.

Year	Central Library	Other Libraries	No. of Libraries with buildings	No. of Books		No. of Readers	No. of Reading Rooms
				in stock	in circulation		
1911—12	1	274	20	155,736	85,795	36,277	60
1920—21	1	627	82	393,698	325,507	62,732	93

Along with Libraries and Reading Rooms, the Department has also established a system of travelling libraries which are simply boxes, each containing 15 to 30 books. Such boxes are lent out for periods of two or three months to local libraries to supplement their own or even to any trustworthy person who is prepared to circulate the books in the locality. No charge is made to the public and the railway freight is paid both ways by the Department. These boxes numbered only 83 in 1911-12, and the books in stock for this purpose were 2,400 in all. In 1920-21, 431 travelling boxes were prepared with 17,975 books. Taking an average for the decade, annually 228 boxes circulated to 132 centres. The annual number of books circulated in this way was 9,049.

305. Comparison with British Gujarat—It now remains to compare the educational results of this State with those of other provinces and states. British Gujarat figures may first be compared. The margin shows how since 1901 British Gujarat has been leading in literacy. It also shows how this State is gradually diminishing the lead, and promises to outstrip its neighbour in the race for education. British Gujarat has added 31 more literates to the thousand in the last 20 years, while in this State, the additional literates per thousand number 49 in the same period. Female literacy has here multiplied more than 5 times, while in British Gujarat the progress is much less rapid.

District or State.	Proportion of literates per mille aged 5 and over								
	1921			1911			1901		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
British Gujarat..	156	254	48	137	234	31	125	227	18
Baroda State ..	147	240	47	119	206	24	98	180	9

Even though in general literacy, this State is still behind British Gujarat, analysing the figures by age-periods, we find as the margin will show that in the school-

District or State	Number per mille literate							
	5—10		10—15		15—20		20 and over	
	Male	Female	Male	Female	Male	Female	Male	Female
British Gujarat	88	33	264	83	343	94	285	39
Baroda State ..	43	20	280	99	354	105	265	34

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going period, this State beats its neighbour. The superiority of British Gujarat is in the age-periods 5-10, and 20 and over only. In the age-period 20 and over, the lead of British Gujarat can be readily understood. Educationally British Gujarat is not so hampered, as this State is, with a large Animistic population. Secondly, Baroda woke up rather later than its neighbour to the need of popular education. As to the ages 5 to 10, as pointed out in para. 298, the introduction of a new class of "partial literacy" has had the effect undoubtedly in stiffening the standard in this State of literacy proper particularly amongst the child population. The greater precision in definition which it entailed must have led to the exclusion of many learners, in the second and third standards from the literate fold. Apart from this reason, there is the other circumstance of the raising of the compulsory age-limit also referred to in the above-mentioned paragraph which led to the general withdrawal of children aged 5-7 from schools, since 1915. This must have affected literacy in this age-group.

306. Comparison with other States and Provinces—In the last census, Baroda State was only behind Travancore and Cochin among Indian States and Burma among British provinces in general literacy. But in English education it was behind the three Presidencies and Burma, and the Indian States of Cochin, Travancore and Mysore. All the figures from the major provinces and States have not yet been received, but from among such as have come, the marginal table has been prepared. From the figures it seems that the high position of this State in general education continues in this census as in past years. In English education, although the figures show progress, this State is still behind the three Presidencies, Burma, Coorg and Delhi amongst Provinces, and Travancore, Cochin and Mysore amongst Indian States.

Name of State or Province	Proportion per mille of literates aged 5 and over	
	In all languages	In English
Burma	314	10
Travancore	279	15
Cochin	214	21·3
Baroda State	**147**	**8·5**
Coorg	144	20
Delhi Province	122	38
Bengal	104	19
Madras	98	11
Mysore	84	12
Bombay	83	12
Punjab	45	7
Central Provinces and Berar.	43	5
United Provinces ..	42	4
Gwalior	40	3
Central India Agency ..	36	4
Hyderabad	33	3
Kashmir	26	4

307. General Educational outlook—The study of census figures as well as of educational returns has so far shewn that mass instruction has now attained a stage of development when the most careful attention of workers in the field will be required. In analysing educational returns we noted that the trend of policy in this State was at present decidedly towards intensive development. In diverse ways steps have been taken which are an ample evidence of the State's sincere desire to make education not only general but effective. Female education has advanced more rapidly under compulsion than male ; as a result in certain parts, and amongst certain communities, the sexes have approached equality in the capacity to read and write. But on the whole the general effect has been, as indicated already, to deepen the already existing chasm between the different strata in society. It is no solution of the problem to suggest that the vast body of agriculturists and the lower classes generally have no interest or love for learning. It has been often alleged on the other hand in discussions regarding national education that the instruction given to the masses is far too literary, too removed from the actual life of the people, to enlist their interest or their support. The present courses of study have been condemned because they are said to favour a kind of a "warped" selective system, fitted only for the higher orders, and not adapted to the needs of the general population. It has also been suggested that the introduction of a literary type of education into rural areas has had the result of drifting the talented among their youths to the more exciting life of towns and cities. "A struggle for merely literary professions ensued and the result is that most of the professions which help in the production of wealth fell to the lot of those who possess inferior ability . This development of towns at the cost of villages, of agricultural produce, of valuable cattle, and of the wealth of the labourer is a matter

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for anxiety."* There has been a great outflow from our villages to towns in the last decade. We have referred to it in Chapter II. One wonders whether mass education of the type at present imparted has had a hand in this urban movement. But there is no doubt that a good deal of discontent is often the result of the instruction given in our villages. It is doubtful whether education has had any vivid effect on the villager's social conduct or on his attitude of patient resignation to the many evils in his community. But it has succeeded in filling his mind with discontent and listlessness towards his calling and even his own native hearth and home. The problem is how to translate the teachings of the school-room into the actual life and conduct of the people. This is not the place to discuss schemes of vocational instruction. But the purpose of this concluding paragraph is only to show that the educational outlook in rural areas which at present is very dismal can only improve by making the village primary schools come into intimate touch with agriculture. That the State is fully alive to the importance of the question is shewn by its appointing a committee in 1918 to go into the question of separate Readers for Rural Schools. The committee felt that " special attempts should be made by the Department of Education to introduce in rural schools a system of instruction which would particularly have reference to the land." They recommended what they called Agricultural nature study for the third part of the existing Readers. Since June, 1919, a scheme of imparting a fair knowledge of elementary agriculture was launched into being. There were ten classes of this type in 1920 with 236 boys in Baroda *Prant*. To these boys, practical lessons in farming in the fields have been given. The experiment is at present only in its tentative stage. The problem is to develop a village educational curriculum on these lines with Dairy farming, handloom-weaving, poultry breeding, rope-making and other village industries taught to the pupils. The curriculum thus diversified may be also lightened on its literary and purely academic side. A primary system thus developed will form the only true basis of a genuinely popular educational system built as on a rock, upon the normal lives and the intimate needs of the people. On this basis one might build securely on all sides, so that a completely organised national system of education may result—a system which can alone befit the people, in the words of the Calcutta University Commission, " for great social ends."

* Quoted from a letter from Mr. G. V. Gadgil, Secretary, Gokhale Education Society, published in the *Times of India*, December 24, 1921.

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SUBSIDIARY TABLE I—EDUCATION BY AGE, SEX AND RELIGION

Religion	Number per mille who are literate											Number per mille of persons who are literate in English aged 5 and over		
	All Ages 5 and over			5—10		10—15		15—20		20 and over				
	Persons	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Persons	Males	Females
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
All Religions	**147**	**240**	**47**	**43**	**20**	**280**	**99**	**354**	**105**	**265**	**34**	**8·46**	**15**	**1·0**
Hindu	142	234	42	43	19	282	94	354	100	254	28	8·01	15	0·51
Jain	515	820	204	230	90	831	477	935	454	932	144	26	49	1·51
Animist	20	37	3	1.9	.24	43	6	76	9	41	2	0·05	0.1	..
Musalman	183	309	48	39	18	315	100	424	109	357	36	5	10	0·5
Parsi	789	909	609	436	255	956	782	991	888	998	731	167	330	46
Christian	249	310	178	58	44	428	320	526	328	305	154	75	77	73
Indian Christian	*232*	*294*	*159*	*48*	*35*	*423*	*320*	*515*	*323*	*285*	*124*	*54*	*56*	*52*
Hindu Arya	564	735	289	150	237	829	516	887	526	782	215	109	160	28

SUBSIDIARY TABLE II—EDUCATION BY AGE, SEX AND LOCALITY

Natural Division	Number per mille who are literate										
	All Ages 5 and over			5—10		10—15		15—20		20 and over	
	Persons	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
1	2	3	4	5	6	7	8	9	10	11	12
Baroda State	**147**	**240**	**47**	**43**	**20**	**280**	**99**	**354**	**105**	**265**	**34**
Central Gujarat exclusive of City	157	256	44	45	20	304	112	389	105	278	28
Baroda City	405	562	213	265	180	682	373	766	370	562	172
Central Gujarat including City.	191	298	67	69	38	352	142	443	143	320	48
North Gujarat	108	184	26	30	8	224	61	275	66	202	18
South Gujarat	148	245	50	33	13	263	88	350	103	285	44
Kathiawad	167	264	63	37	25	323	153	425	169	290	39

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SUBSIDIARY TABLE III—Education by religion, sex and locality

Natural Division	Number per mille who are literate											
	Hindu		Jain		Animist		Musalman		Parsi		Christian	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
1	2	3	4	5	6	7	8	9	10	11	12	13
Baroda State	**234**	**42**	**820**	**204**	**37**	**3**	**309**	**48**	**909**	**699**	**310**	**178**
Central Gujarat exclusive of City	251	44	770	220	26	3	281	27	945	785	210	123
Baroda City	578	207	925	494	..	..	410	154	963	937	578	445
North Gujarat	159	21	827	170	8	..	260	30	923	840	473	296
South Gujarat	374	54	877	240	38	3	433	63	901	680	535	348
Kathiawad	248	59	770	242	36	..	304	58	1,000	800	864	1,000

Note—The figures in this table are for persons of 5 years of age and over only.

SUBSIDIARY TABLE IV—English Education by age, sex and locality

Natural Division	Literate in English per 10,000															
	1921										1911		1901		1891	
	5—10		10—15		15—20		20 & over		All ages, 5 and over		All ages, 5 and over		All ages, 5 and over		All ages, 5 and over	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Baroda State	**2·1**	**1·1**	**103**	**16**	**394**	**24**	**167**	**9**	**153**	**10**	**104**	**5·3**	**59**	**2**	**20**	**1**
Central Gujarat exclusive of City	·9	1·6	68	17	316	14	92	4	96	6	75	4	36	0·1	7	0.1
Baroda City ..	37	21	780	244	2645	313	1247	99	1184	125	796	·65	476	·23	206	17
North Gujarat	0·6	..	60	3	185	4	79	2	74	2	43	0·39	20	0·35	7	0·3
South Gujarat ..	1·6	..	110	6	459	23	194	11	174	10	89	3·2	70	3·1	19	0·8
Kathiawad ..	0·7	..	101	4	360	9	117	3	117	3	88	2	34	0·7	15	0·3

SUBSIDIARY TABLE V—Progress of Education since 1881

Natural Division	Number of literate per mille																					
	All Ages 10 and over										15—20						20 and over					
	Males					Females					Males			Females			Males			Females		
	1921	1911	1901	1891	1881	1921	1911	1901	1891	1881	1921	1911	1901	1921	1911	1901	1921	1911	1901	1921	1911	1901
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Baroda State ..	**277**	**299**	**199**	**155**	**107**	**51**	**25**	**9**	**6**	**1·8**	**354**	**258**	**206**	**105**	**40**	**13**	**265**	**217**	**208**	**34**	**16**	**7**
Central Gujarat exclusive of City	293	250	238	165	108	48	20	7	3	1	389	305	216	105	42	10	278	230	245	28	11	5
Central Gujarat with City	338	284	270	198	135	71	30	10	6	2	443	343	285	143	60	17	320	266	278	48	19	8
Baroda City ..	600	472	427	377	289	218	84	27	25	7	766	541	449	370	151	49	562	460	430	172	63	21
North Gujarat ..	215	173	137	111	73	30	12	3	3	1	275	176	142	66	16	3	202	165	143	18	7	2
South Gujarat ..	289	226	219	179	130	58	33	25	13	5	350	270	240	103	45	38	285	219	224	44	26	22
Kathiawad	311	260	187	173	135	71	40	7	5	1	425	294	215	169	71	11	290	237	194	39	21	5

Note:—Proportional figures for the year 1881 have been calculated for all ages, 6 and over. Persons aged 15 and over who were returned as "learning" in 1881 and 1891 have been reckoned as "literate" in the calculation of the above proportions.

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SUBSIDIARY TABLE VI—EDUCATION BY CASTE

Caste	Number per 1,000 who are literate						Number per 10,000 who are literate in English					
	1921			1911			1921			1911		
	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
1	2	3	4	5	6	7	8	9	10	11	12	13
HINDU												
Bhangi	29	50	8	19	33	3	1	2	..	..	..	..
Bharwad	24	36	11	10	14	6	..	..	..	1	3	..
Bhavsar	376	674	95	311	607	41	98	198	9	45	89	5
Brahman Anavala	457	678	207	417	704	81	561	1030	7	315	575	10
,, Audich	394	644	136	316	625	44	292	564	10	171	329	3
,, Deshastha	587	838	312	508	805	146	1562	2869	128	886	1582	39
,, Mewada	359	604	93	313	540	40	224	431	..	148	208	5
,, Nagar	552	772	338	479	724	248	1233	2364	135	953	1897	66
,, Tapodhan	229	391	68	184	311	35	104	195	14	52	96	..
Chamar	27	50	3	19	34	4	1	2	..	1	2	..
Darji	184	317	64	124	223	34	21	43	0.1	16	34	..
Dhed	45	81	10	26	46	5	..	..	..	3	5	0·2
Ghanchi	308	548	54	261	491	24	33	63	2	18	35	..
Hajam	133	228	33	84	158	9	18	35	1	10	20	..
Kanbi anjana	74	138	9	81	155	5	6	11	1	15	29	..
,, Kadwa	122	219	18	87	158	9	21	41	..	17	32	..
,, Lewa	259	414	79	214	363	32	104	192	2	77	139	1
Koli	46	80	8	26	46	4	3	6	..	1	1	..
Kumbhar	88	148	24	53	99	6	6	12	1	5	10	..
Luhana	382	665	103	372	645	73	169	337	4	131	250	..
Luhar	169	302	40	126	235	19	21	42	..	8	16	..
Maratha (Kshatriya)	368	545	157	264	423	70	499	823	110	304	522	41
Prabhu	665	842	460	587	826	332	2491	4,125	602	1645	3105	78
Rabari	14	21	7	11	19	2	0·2	0·4	..	.3	0·5	..
Rajput	130	225	25	92	159	12	16	31	..	13	24	1
Soni	412	671	136	371	691	61	78	146	1	48	97	..
Sutar	215	361	53	170	303	24	26	49	1	20	39	..
Vagher	29	30	27	17	32	1	9	11	7	3	5	..
Vaghri	16	26	3	9	14	2	2	4	..	0·4	1	..
Vania Disawal	504	769	241	412	776	98	484	938	32	270	584	..
,, Khadayta	521	776	186	450	744	89	494	845	34	520	934	9
,, Lad	505	791	213	404	728	101	585	1101	9	342	699	8
,, Modh	569	816	289	517	817	173	786	1452	29	525	964	21
,, Shrimali	545	802	266	478	786	199	528	973	45	328	587	5
JAIN												
Vania Shrimali	518	817	220	452	839	95	250	475	26	139	290	..
ANIMIST AND HINDU												
Chodhra (Hindu)	84	161	2	Figures not available			..	..	..	Figures not available		
,, (Animist)	35	68	1	12	22	2	18	34	..	..	..	..
Dhodia (Hindu)	65	101	25	Figures not available			8	16	..	Figures not available		
,, (Animist)	46	85	5	14	24	3	1	1	..	..	..	..
Dubla (Hindu)	20	35	5	Figures not available			2	3	..	Figures not available		
,, (Animist)	13	19	7	14	24	2	..	..	..	..	..	..
Nayakda (Hindu)	28	52	6	Figures not available			..	..	..	Figures not available		
,, (Animist)	21	34	6	8	13	2	2	3	..	..	..	..
MUSALMAN												
Memon	155	258	46	132	261	18	7	13	..	8	15	2
Molesalam	140	258	9	81	146	5	4	7	..	7	12	..
Pathan	178	296	32	140	251	12	71	117	13	31	57	..
Saiyad	227	390	57	211	375	34	107	204	5	123	235	..
Shaikh	186	310	47	140	253	16	75	134	8	25	47	..
Vohora	277	468	95	241	461	41	101	202	3	38	76	4

NOTE:—The figures in this table are for persons of 5 years of age and over only.

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SUBSIDIARY TABLE VII—Number of Institutions and Pupils according to the returns of the Education Department

Class of Institutions	1921				911				1901				1891	
	Number of				Number of				Number of				Number of	
	Institutions	Males	Females	Scholars	Institutions	Males	Females	Scholars	Institutions	Males	Females	Scholars	Institutions	Scholars
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
All Kinds ..	**2,797**	**136,951**	**61,865**	**198.816**	**3.026**	**130,998**	**54.479**	**185.477**	**1.213**	**72.016**	**14.428**	**86.444**	**521**	**53.070**
Public Institutions ..	*2,711*	*131,105*	*60,816*	*191,921*	*2,988*	*127,463*	*54,147*	*181,910*	*1,163*	*67,987*	*14,222*	*82,209*	*394*	*45,196*
Arts College ..	1	559	13	572	1	329	..	329	1	236	..	236	1	113
Secondary Schools ..	41	7,947	258	8,205	28	4,759	..	4.759	17	2,287	..	2,287	13	1,605
Primary Schools ..	2,639	119,997	60,408	180,405	2,932	119,587	53.988	173,575	1,120	63,757	13,778	77,535	377	43,357
Training Schools ..	5	382	96	478	2	386	69	455	1	..	25	25	1	25
Other Special Institutions.	25	2,220	41	2,261	25	2,402	90	2,492	23	1,707	419	2,126	2	96
Private Institutions ..	*86*	*5,846*	*1,049*	*6,895*	*38*	*3,535*	*332*	*3,867*	*50*	*4,029*	*206*	*4,235*	*127*	*7,874*
Advanced	27	3,235	..	3,235	12	1,818	..	1,818	4	639	..	639	4	373
Elementary	59	2,611	1,049	3,660	26	1,717	332	2.049	46	3,390	206	3,596	123	7,501

SUBSIDIARY TABLE VIII—Literacy by natural Areas

District or Natural Division	Proportion of literates per mille of persons 7 years and over			Proportion of illiterates per mille of persons 7 years and over			
				Able to read only		Totally illiterate	
	Males	Females	Both sexes	Males	Females	Males	Females
1	2	3	4	5	6	7	8
Baroda State	**257**	**50**	**157**	**15**	**6**	**728**	**944**
Central Gujarat	*272*	*47*	*167*	*19*	*7*	*709*	*946*
Charotar	330	85	221	25	15	645	900
Vakal	252	35	148	16	4	732	961
Kahnam	304	40	178	17	5	679	955
Chorashi	190	24	112	14	4	796	972
North Gujarat	*198*	*28*	*116*	*13*	*4*	*789*	*968*
East Kadi	205	28	118	14	5	781	967
West Kadi	189	28	112	11	2	800	970
Trans-Sabarmati area	186	30	112	12	4	802	966
South Gujarat	*263*	*54*	*160*	*10*	*5*	*727*	*941*
Rasti	408	87	244	14	7	578	906
Semi-Rasti	197	26	114	9	3	794	971
Rani	88	16	53	5	2	907	982
Kathiawad	*285*	*67*	*180*	*18*	*11*	*697*	*922*
Mid-Block	314	70	195	16	11	670	919
Scattered areas	297	74	191	26	13	677	913
Coast area	238	60	154	17	10	745	930

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SUBSIDIARY TABLE IX—Literacy in Selected Towns

Town	Proportion of literates to total population							
	All ages 7 and over		7—15		15—20		20 and over	
	Males	Females	Males	Females	Males	Females	Males	Females
1	2	3	4	5	6	7	8	9
Baroda City	588	224	589	340	766	370	562	172
Navsari	574	265	465	237	726	420	584	252
Bhadran	555	268	568	553	808	505	505	136
Amreli	530	134	472	214	742	250	522	88
Bilimora	491	150	366	145	638	244	512	136
Dwarka	479	141	363	171	584	308	497	111
Sidhpur	477	89	359	135	508	187	517	63
Patan	445	103	311	120	569	191	476	85
Petlad	443	145	345	183	574	226	454	123
Dabhoi	425	61	278	98	531	152	458	40
Vadnagar	418	52	300	83	546	156	453	39
Padra	408	63	356	78	661	130	389	51
Visnagar	307	65	282	100	516	127	422	49
Kodinar	375	80	253	128	504	146	414	53

SUBSIDIARY TABLE X.—Literacy by Script

Gujarati speaking literates who are able to understand							Marathi speaking literates who are able to understand						
Name of language	Number			Proportion per mille of standard Gujarati speakers			Name of language	Number			Proportion per mille of standard Marathi Speakers		
	Persons	Males	Females	Persons	Males	Females		Persons	Males	Females	Persons	Males	Females
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Gujarati* ..	259,340	218,510	40,830	138·9	226·3	45·3	Marathi * ..	11,858	9,173	2,685	366·0	534·8	176·1
Gujarati only	242,655	203,081	39,574	129·9	210·3	43·9	Marathi only ..	5,586	3,595	1,991	172·4	209·6	130·6
English also..	11,132	10,635	497	5·96	11·0	0·6	English also ..	2,919	2,703	216	90·1	157·6	14·2
Marathi also	1,433	1,284	149	0·8	1·3	0·2	Gujarati also ..	5,325	4,763	562	164·4	277·7	36·9
Hindi also ..	2,400	2,260	140	1·3	2·3	0·2	Hindi also ..	563	522	41	17·4	30·4	2·7
Urdu also ..	2,585	2,150	435	1·4	2·2	0·5	Urdu also ..	31	28	3	1·0	1·6	0·2

* The above figures are compiled from a combination of literates and those able to read only.
Separating the figures we get the following table for those who are able to read and write in Gujarati and Marathi.

Name of language	Number speaking that language who are literate in it					
	Number			Proportion per mille of speakers		
	Persons	Males	Females	Persons	Males	Females
Gujarati	242,479	206,056	36,423	129·9	213·4	40·4
Marathi	11,354	8,771	2,583	350·4	511·6	169·4

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CHAPTER IX

LANGUAGE

STATISTICAL DATA

Subject	TABLES	
	Imperial	Subsidiary
Language	X	....
Distribution of total population by Language	....	I
Distribution by Language of the population of each Division	....	II
Comparison of Caste and Language Tables	....	III
Numbers speaking the languages contrasted with castes and races supposed to speak the Language	....	III-A

308. Introductory—The statistics regarding the language distribution in the State are contained in the Imperial Table X on the basis of which Subsidiary Tables I and II have been prepared. In Subsidiary Table III, an attempt is made in regard to Non-Aryan tribes to see how far Aryan languages like Gujarati and Marathi are displacing the aboriginal dialects that obtain amongst them.

The main object of this chapter will be statistical, in that it will seek to estimate the accuracy and value of the figures returned, the variations if any in the linguistic distribution and the mutual interaction of languages, in so far as there is evidence of it from figures ; advantage will also be taken in that connection to find out from the statistics compiled in regard to Literacy by Scripts collected primarily for the use of Chapter VIII, (*vide* State Table XII and Subsidiary Table X of Chapter VIII) how far such languages as Urdu and Hindi have a hold in this State. In the course of the discussion points regarding the linguistic affinities of the principal languages in the State will be briefly touched on mainly with reference to the new light thrown on the origins and classification of Indian languages since the Linguistic Survey. Finally the statistics regarding the literary and journalistic activity of the decade in this State will be briefly dealt with.

309. Accuracy of the Return—The instructions to the enumerators about collecting details for language were precise enough :—

" Column 13 (*Language*)—Enter the language which each person ordinarily uses in his own home. In the case of infants and deaf-mutes, the language of the mother should be entered."

Not much difficulty was experienced in consequence of these instructions. In spite of the express mention of the infant and the deaf-mute, a humourist here and there returned these classes of persons as " speaking no language " (*kain bolto nathi*). More serious was the case of the bilingual family or head of the family. The Cutchhi Memon, for instance, occasionally returned both Gujarati and Kachchhi. Instructions were issued in all such doubtful cases to go by the language used by the women of the family, as it was thought that owing to their cloistered lives, the women were more likely to preserve the purity of their dialects. It is true that the subtleties of the Linguistic Survey are not yet understandable of the people ; the enumerators were given strict instructions however to exercise as little discretion in classification as possible. They were to take down the name of the language as given actually by the people themselves. The work of readjusting the materials according to the standard classification of the Linguistic Survey was left to the Tabulation Office, where the instructions were far more elaborate. A list however of possible wrong entries (as are likely to recur in this State) was prepared for the use of the enumerators. With the rapid growth of education people no longer refer to their spoken language after the

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castes or occupations to which they belong. Still in this census, we had Vahanvati (1 speaker), Nagadi (or Nagari) with 5 speakers, and Rabari with 1 speaker. Territorial names generally gave little trouble to assign. Jadeji (with 161 speakers) was easily recognisable as another name for Kachchhi as spoken in Kathiawad. Similarly Memni (32 speakers) was assigned to Kachchhi. Okhai is presumably the name of the Gujarati variant in Okhamandal and had 70 speakers. Only 18 speakers returned Jhālawadi. It is a well-known dialect of Kathiāwadi Gujarati. In 1911, 94 persons returned it as their dialect. Obviously the strength of this dialect is much larger than the figures indicate. But as the enumerators were given to understand that no dialects of Gujarati were to be recorded in this census and as the nature of dialectical differences in Gujarati was also explained to them in the different lectures, it is presumed that many Jhālawadi speakers were returned under Gujarati. In regard to most other territorial names identification was not difficult. Peshori for Lahndā, Pardesi for Awadhi, Kanadi for Kanarese, Rajputani for Rajasthani, Madrasi for Tamil, Gurkhi for Khās-Kura or Naipali, Tailangi for Telugu, Afghāni and Kabuli for Pashto, Kankreji for Gujarati, Makrāni for Balochi and similar cases could be easily recognised and assigned.

310 Treatment of certain difficult cases of Language entries—Certain difficult cases must now be mentioned. Rāngdi (with 3 speakers) is perhaps Rangri or Rajwāri, mentioned in the Index as a form of the Mālvi dialect of Rajasthani, to which therefore it was assigned. Vitolia with 48 speakers (from Navsari *Prant*) occurs in the State perhaps for the first time. In the Bombay Census Report for 1911 it was regarded as unidentified and classed as such. Speakers returning this dialect came from the Surat Agency. Judging from their sex composition the speakers seem to be permanent residents. I hazard a guess that they are an unidentified Bhil group speaking a dialect about which nothing is known. Bamochi perhaps is a mistake for Bavchi. Kolhi and Gaumukhi are similarly taken to be mistaken forms of Kolghi and Gurmukhi. Valavdi (138 speakers) was assigned to Chodhari for the reason that Valavdas are a sub-section of the Chodhras. Khodi or Khadi was returned by 32 persons (all males) in the Baroda *Prant* and was assigned to Hindi, as the Index mentioned that it was a form of Hindi spoken in the Panch Mahals and Khandesh. Tharadāri (3 speakers from Kadi *Prant*) is presumably the same as Thari (Thareli, Tharadiri, Tharki or Tharin), a minor dialect of Sindhi in which it was included. The marginally noted doubtful cases have been assigned to the languages shewn against their names apparently for no other reason but sheer despair.

Name of Dialect	Locality where found	Number of speakers returned		Language to which assigned
		Males	Females	
Madhli ..	South Gujarat	10	..	Bihari (Maithili)
Burkhi ..	North Gujarat	1	..	Burdi
Jekari ..	North Gujarat	28	14	Gujarati
Madri ..	City	5	3	,,
Guvadha ..	South Gujarat	2	1	Marathi-Varhadi dialect (Govari).

311. The Classification followed—The classification, it may be here mentioned, has followed the lines laid down in the Grierson Scheme. One or two minor errors however have to be noted. When it was too late to change it was discovered that Khandeshi which returned 1,103 speakers (546 males and 557 females) and should have been shewn separately in the Table was included under Bhili. Banjari (76 speakers) is assigned a place in the Linguistic Survey as a dialect under Rajasthani and should have been so included here. In 1901, it was classed as a gypsy dialect in this State. In 1911 it was included under Bhil dialects and in conformity with this practice, it has been so included in this census. But in strict accordance with the Survey, it should have been included under Rajasthani. Bhil dialects, Rao Bahadur Govindbhai suspects, were very loosely recorded in 1901. At the caprice of the enumerators, a great number of Bhil speakers must have been therefore included under Gujarati. In 1911 and 1921, the procedure adopted wasfar stricter and the present figures no doubt represent the situation far more correctly than twenty years ago. In regard to Urdu, instructions were stricter in this census than before. "Musalmani" is a very vague term, rather uncritically used to

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comprise a range between what is in effect ordinary Gujarati with a free admixture of Hindustani words to a somewhat debased Urdu, with many evidences of the influence of languages of the Outer Band. Enumerators were cautioned about this and told to enquire when a person returned "Musalmani" whether he meant Musalmani Gujarati or Urdu proper. Finally as to Kachchhi, it may be pointed out that in 1901 Mr. Dalal classed it as a dialect of Gujarati, while according to the Survey, it is now definitely assigned as a dialect of Sindhi. In the last two censuses, therefore, Kachchhi has been included in the North-Western Group with Sindhi and Lahnda.

312. Was there any falsification of Returns ?—Finally I do not think that the general accuracy of the language figures can be impugned on the score of wilful falsification of returns. Echoes of Hindi-Urdu controversy are faintly heard in this State, but there is no tendency either among the enumerators or the people deliberately to misstate the language. There is no religious bias existing to influence the enumerators in this regard. Musalmans of good social position, especially among the local converts, do, it is true, wish it to be known that they speak Urdu as the language of their homes. It is the language of their religion and their culture, and it is therefore a matter of pride with them to show off their acquaintance with the language. As a matter of fact in recent years, local Musalmans of good family have begun to adopt Urdu as their home language. In the local Urdu schools, they send their children especially their girls in increasing numbers to study the language ; so that there is no doubt that Urdu is having an increasing hold at least as the language of their reading and polite conversation on the better classes of Gujarat Musalmans. Of course the Urdu which the generality of them speak is a horrible variety—at best Vohrasāi with just a little interlarding of Persian words—which will make the flesh creep of the man from Delhi. But there is little evidence to show that they have any *feeling* against Gujarati as a language or that they regard it as something which they are ashamed to call as their own. On the other hand, the current tendencies are the reverse of that. Besides I believe the record of languages in the literacy columns in this census gave them the opportunity, if they so desired, of recording Urdu somewhere without the necessity of falsifying the language returns.

313. General Review of the Results—Gujarati continues to be the dominating feature of the Language Census. 88 per cent. of the total population speak it. Of the rest, the Bhili group of dialects, (including Khandeshi and Banjari) is spoken by 7 per cent. Urdu with Hindi and allied dialects claims 3 per cent. Marathi, the language of the Ruling family, is spoken hardly by 2 (or 1·6) per cent. The marginal table shows the main distribution of languages in the State. Taking the distribution by the family of languages, the Indian Branch of the Indo-European Family claims 2,125,606 or the entire population less 916 persons. The Eranian Branch claims 276 speakers (228 males and 48 females). The European and Semitic Branches together have 250 speakers. The Dravidian Family is represented by only 220 speakers. Of the Indian Branch of the Indo-European Family, the Central (or Western) group has the largest number of speakers or 93 per cent.

Languages	Speakers	
	Number	Per mille
Gujarati with dialects ..	1,867,343	878
Bhili and Khandeshi ..	145,856	68
Western Hindi (Urdu, Hindustani, Hindi, Bundelkhandi, etc.)	62,367	30
Rajasthani	4,453	2
Marathi	33,165	16
Kachchhi	11,439	5
Sindhi and Lahnda ..	661	..
Other languages	1,238	1

Altogether twenty-six languages and fifteen separate dialects were recorded in this census. The idea of having detailed classification by dialects was abandoned, but in view of the special interest attaching to them, figures for the Bhili group of dialects, Urdu, Hindi and Hindustani and Goanese were separately compiled. The South Gujarat Division contains the largest variety of languages spoken amongst its inhabitants. Out of a total of 41 languages and dialects 34 are found there ; the City has representatives of 30 languages and dialects ; the Central and Northern Divisions have 28 and 23 respectively. Kathiawad has the least linguistic complexity having only 14 separate languages and dialects found within its borders.

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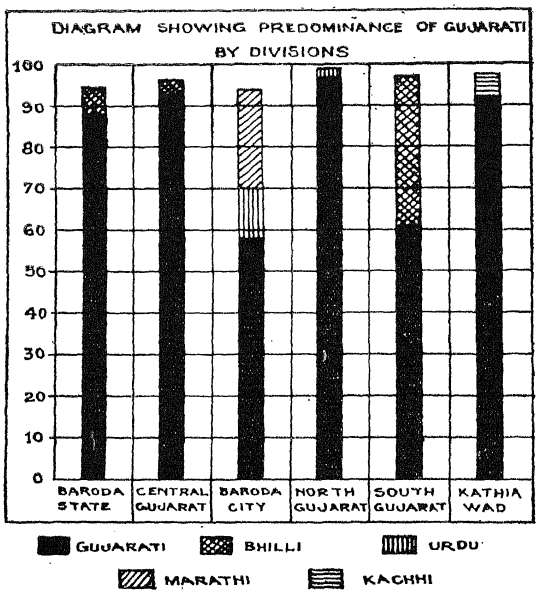
314. Linguistic Distribution by Divisions—The accompanying diagram illustrates the linguistic distribution in the different divisions. Subsidiary Table II gives the proportional figures. Of the main languages, Gujarati of course is everywhere spoken, but it is most prevalent in North Gujarat, where it claims 97 per cent. of the inhabitants as its speakers. In Kathiawad, and Central Division (without the city), the proportion of Gujarati speakers is 92 per cent. The City, being the headquarters of the administration, has a large immigrant population in military and civil employ. Here only 58 per cent. of the total population claim Gujarati as their mother-tongue. In South Gujarat, 43 per cent. of whose population is Animistic, 61 per cent. are Gujarati speaking. Urdu is spoken by 25 persons in a thousand in the State. The large Musalman population in the City accounts for the greatest proportion of Urdu speakers being found there. 12 per cent. of the City's population speak Urdu. In Central Gujarat, where a good proportion of the urban population is Musalman, the proportion of Urdu speakers is 29 per mille. In any of the other divisions the proportion of Urdu speakers to total does not exceed 2 per cent. Marathi is confined almost exclusively to the City, where 24 per cent. of the total population are credited with speaking it. South Gujarat has the next largest number of Marathi speakers. Large numbers of Marathi speakers accompanied the Gaekwad in the first conquests of Gujarat: Songadh was his first capital, and the neighbourhood of the division to the Marathi speaking tracts of Khandesh and Nasik is the reason which must have induced many old Maratha and Deccani families to settle there. Kathiawad follows the Southern Division in the prevalence of Marathi. Mr. Dalal pointed out in 1901 that in consequence of the break-up of the Manekwada contingent camp, most of the Marathas belonging to it repaired to Amreli and established their houses there permanently. Rajasthani speakers (Marwad Brahmans and Vanias) are found almost equally in the Central and Northern Divisions. The City has 680 Rajasthani speakers—mostly Marwari cloth merchants and money-lenders. Of the other Indian languages, Kachchhi (or Jadeji) claimed by 11,439 speakers, is mostly to be found in Kathiawad, 57 per mille of whose population belong to this language; Sindhi speakers numbering 657 are mostly to be found in Central and North Gujarat. Some of them are relicts of old Sardar families: others do good business as contractors—a few are students in the local college. Bengali is spoken by 93 persons, mostly officials in the State employ with their families and students in the local Kala Bhavan (Technical Institute). A few Bengali pilgrims were returned also from Okhamandal. Tamil speakers number 74, principally found in the city. Kanarese (or Kannada) is spoken by 145 persons, mostly in Baroda City and South Gujarat. Possibly some of the Gaud Saraswats and Karhada Brahmans returned this language. Telugu is the unit of the Dravidian family which is most largely represented here, namely, by 168 persons, mainly in the City. Most of the Tamil and Telugu speakers are students in the Kala Bhavan. The Eranian Branch is represented by 276 speakers of whom 215 are credited to Balochi and 35 to Pashto. Most of the Balochi speakers are the Makranis in the City, imported a little before



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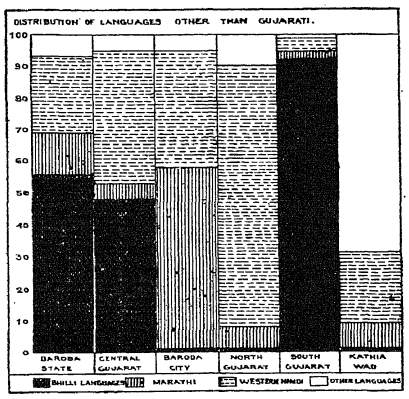
the Census as recruits for the State Police. The Kabuli traders (who speak Pashto) are occasionally to be met with in all the four divisions.

As to the languages of Europe, 160 speak English and 45 claim to do so in Portuguese. The English speakers are the Europeans and Anglo-Indians in State or Railway employ, the Political officers and the British officers of the regiment in the Camp, and Christian missionaries mostly of American nationality. The Portuguese speakers are Goans, of whom the higher classes speak Portuguese as their home-language. A few Goans returned English as their home-language, and one Bengali did likewise. The rest (101 speakers) returned Goanese. There were 13 speakers of French, of whom a few were French Creole wives of MusalmanVohoras and at least one was a native woman of Mauritius of Negro descent. This enumeration may be well closed with the mention of German which had two speakers.

315. Distribution of Languages other than Gujarati in the State—The diagram attached to the preceding paragraph shows strikingly the predominance of Gujarati in all parts of the State. As a matter of fact, Gujarati so dominates the figures that the relative importance of other languages is not very well realised. For this reason, another diagram is given which plots the relative importance of other languages. This diagram shows us that, apart from Gujarati, Central Gujarat (without the City) has Bhil languages and Western Hindi, claiming almost an equality of speakers; the City has a preponderance of Marathi speakers and a respectable minority speaking Western Hindi. In North Gujarat, almost the whole of the population speaks Gujarati but the few that remain belong almost entirely to Western Hindi. In South Gujarat 39 per cent. of the population speak other languages than Gujarati: of these, the vast majority speak some form of Bhili. In Kathiawad, only 8 per cent. of the inhabitants do not speak Gujarati. Of these about 70 per cent. are Kachchhi speakers, and the remainder are speakers of either some Western Hindi dialect or of Marathi.



316. Variation in Gujarati, Bhili and Western Hindi—In the margin a statement is appended giving the proportionate figures per mille for Gujarati, Bhili and Western Hindi, since 1891. Any comparison of these figures must take into account the factors of accuracy of record and of changes in classification which have affected the distribution. In 1891 and 1901, it appears that Kachchhi, now regarded as a dialect of Sindhi, was considered part of Gujarati; but in the marginal table, its figures have been excluded from the latter total.

Year	Per Mille of Population		
	Gujarati speakers	Bhili speakers	Western Hindi speakers
1891	930	....	40
1901	903	35	35
1911	864	72	36
1921	878	68	30

In 1891, further, the Bhil dialects were not separately shewn. In 1901, these were separately recorded, it is true, but the work was far from satisfactorily done. In the last two censuses, the figures for Bhil dialects may be accepted however to be approximately correct with this reservation that Banjari should be transferred to Rajasthani for both censuses and that Khandeshi figures for 1921 should be separated from the Bhil dialects. The figures for Khandeshi for 1911 are not unfortunately available. The increase in absolute figures in Gujarati since 1911 amounts to 111,036, or 6·3 per cent. while the general population has increased only by 4·6, which indicates that Gujarati has progressed at the expense of other languages.

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A clue to the direction in which such absorption has taken place is furnished by the figures for the Bhil dialects and Khandeshi. These dialects show a decline after deducting figures for Banjari in the number of its speakers from 146,097 in 1911 to 145,780. This decline has taken place inspite of a real increase in these tribes. There were—taking both the Hindu and Animist sections—altogether 246,926 of these tribes in 1911. In 1921 their numbers increased to 258,447. The increase amongst the tribes is 4·7 per cent., the number of Bhili speakers amongst them has declined by only 0·2 per cent., while the number of speakers of other languages among them has increased from 100,829 in 1911 to 112,667 in 1921 or by nearly 12 per cent. The interaction of languages will be further studied from another aspect in a later paragraph. But in the meanwhile it need only be mentioned that this absorption of Bhili by Gujarati is a progressive process and will show even more striking results in the next census. Gujarati also has gained a little at the expense of Urdu and Kachchhi as will be pointed out later.

To illustrate further the point about the gradual absorption of Bhil languages by the Aryan tongues a special table showing language-distribution amongst Animists, and all others except Musalmans, has been prepared from the Compilation Register. It is given in the margin. It shows that 33,152 or 20 per cent. of professed Animists have adopted Gujarati as their language, and 401 persons from these tribes have returned Marathi. These latter must be Khandeshi Bhils and such among Kathodias and Varlis as have taken to Marathi as their home-tongue. 129,350 Animists or 79 per cent. of the total have returned some dialect of Bhili; while amongst the others (Hindus mostly) 16,497 are shewn as speaking Bhili. These must be drawn from the 95,370 Hindus who belong to the aboriginal tribes of whose number at least 78,873 therefore must be speaking some tongue of civilisation like Gujarati or Marathi. Subsidiary Table III gives the strength of the tribe and compares it with the strength of the tribal dialect. A study of that table affords convincing proof for the statement that the spread of Gujarati amongst these people is almost always commensurate with the extent of Hinduisation that prevails in the tribe. Dublas, Dhankas, Mavchas, Talavias and Tadvis have most come into contact with Hindus, and these show the greatest displacement of their tribal dialects. Mavchi for instance has disappeared in this census. Dubli with 421 speakers is almost extinct. Bhili shows a decrease of nearly 10 per cent. since 1911; Naikdi has decreased by about 55 per cent. The largest decrease in this dialect has happened in Baroda *Prant*, where its connection with Gujarati is the closest. In regard to Naikdi, it must be also understood that it is no proper name of any one dialect but a description of the variant forms of speech spoken by Nayakdas in different localities. In Lunawada State and Baroda *Prant*, for instance, Naikdi is almost pure Gujarati. In South Gujarat, it is a mixed form of speech with a Gujarati-Bhili basis, but a very strong Marathi element. There are one or two reservations however. Bavchas or Bhil grooms who have become also completely Hinduised have shewn greater attachment to their homespeech. Bavchi* however still flourishes and claims the majority of the tribe as its speakers. The figures for Chodhras in regard to religion are as pointed out in Chapter IV open to suspicion. The number of Hindus amongst them must be much larger than the figures show. On the other hand they are a tribe somewhat conscious of their pride of place amongst these people, and it is quite possible that inspite of their Hinduisation they have still retained hold of their ancestral language. Gamatdi and Dhodia show increases also on the figures of 1911. Finally it is to be noted that the work of Christian Missions also in these tracts has helped the spread of Gujarati among these people. The Christians in

Language	Number of speakers who are	
	Animists	All others except Musalmans
Gujarati	33,152	1,735,482
Bhili	129,350	16,497
Western Hindi	9	6,770
Marathi	401	31,958
Rajasthani and other languages	165	10,410
Total ..	163,077	1,801,117

*Bavchi is described by Mr. Dalal as a gipsy dialect. It is nothing of the kind. It is a form of Gujarati Bhili of which the closest approximation is or perhaps was, found in Mavchi. The latter dialect was a little mixed with Marathi and Khandeshi. But I have had whole sentences of Mavchi read out from the Survey to Bavchas, and these were perfectly intelligible to them.

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the Rani and the Semi-Rasti tracts of South Gujarat who number 398, mostly belong to these forest tribes. None of these have entered a Bhil dialect as their language. Gujarati is almost the only language they are supposed to speak.

317. Strength of Western Hindi amongst Musalmans estimated—The returns of language have been specially extracted, as in the case of Animists, from the Compilation Register for the Musalmans. From these figures it appears that 98,709 Musalmans or 61 per cent. speak Gujarati, 55,588 speak some form of Western Hindi, 6,900 speak Kachchhi, 143 speak Rajasthani, 80 speak Marathi and 948 speak other languages (mostly Pashto, Balochi and Sindhi). Let us see if these figures are borne out from the Caste Table. It used to be supposed that speakers of Urdu and allied dialects were generally confined to the Musalmans of foreign descent, and that the local converts generally spoke Gujarati. This is generally true now with certain reservations: certain sections of the local converts have always spoken Urdu, especially those in whom the foreign strain or influence is more evident like Khokhars, Poladis, Behlims, Kasais, Kasbatis, Makwanas, and Rangrej. The Maleks speak Gujarati in certain areas like North Gujarat, Urdu in other areas like South Gujarat; and in other places the two languages are divided equally. Roughly 45 per cent. of Maleks on this basis, are Urdu speakers. Generally the tendency among those local converts in whom the foreign strain is prominent is that they adopt Urdu in towns, while retaining Gujarati in rural areas. Amongst Vohoras, the English educated section (about 2 per cent.) have begun to speak Urdu in their homes and teach it to their children. Again communities like the Saiyads, Mughals, Shaikhs, Pathans and Fakirs have always spoken Urdu or Hindustani. A few converted Rajputs speak Rajasthani perhaps in the Northern Division. In regard to Shaikhs and Pathans, although it is true that every regular member of these castes speaks Western Hindi, there are found among them many spurious recruits from certain lower castes, who pass off by these names to raise themselves in the social scale. The Pinjaras for instance, are said to be ashamed of their calling as cotton cleaners and wish to pass off as Vohoras or Dhunak Pathans or simply Pathans. They are all however Gujarati speakers. I am inclined to think that about 30 per cent. of Shaikhs and Pathans, for this reason and also on account of their long domicile in Gujarat, are speakers in Gujarati. Sindhi Musalmans number 3,912. Only a small proportion of them speak their native Sindhi, most having adopted some form of Urdu. Some retain Lahnda, a few may be speaking Panjabi. On the whole we take 80 per cent. of these to be Urdu-speaking. Besides Pinjaras, all Molesalams and Momnas and the vast majority of Vohoras speak Gujarati. Memons if they happen to belong to the Cutchi Memon section speak Kachchhi, so also do Kathiawadi Khojas. But the rest of the Khojas and Memons speak Gujarati. As to the minor Musalman groups, it has been mentioned already that they are divided into two broad classes—one in which the foreign strain or influence is more evident like Rangrej, Behlim, Khokhar, Makwana and Kasbatis, and the other like the Tais, Pindharas, Dudhwalas, Ghanchis, Kumbhars, etc., who are purely local converts. In regard to the latter, all are generally Gujarati-speaking. In regard to the former, all persons residing in towns and belonging to these groups have been assumed to be Urdu-speaking. That is to say, about 40 per cent. of the total of these groups are credited to Western Hindi. On the basis of these considerations, the marginal table has been prepared. The table also indicates the total figure for indigenous Musalmans after excluding all Afghans, Balochis, Makranis and Arabs.

Name of indigenous Musalman Caste	Strength in 1921	Proportion understood to speak		
		Western Hindi	Gujarati	Kachchhi
Saiyad	8,915	100	..	..
Shaikh	26,854	70	30	..
Pathan	13,500	70	30	..
Malek	7,839	45	55	..
Fakir	4,846	100	..	..
Mughal	1,029	100	..	..
Sindhi	3,912	80	..	..
Memon	13,871	..	64	36
Vohora	26,455	2	98	..
Pinjara	4,473	..	100	..
Momna and Molesalam	16,530	..	100	..
Khoja	2,009	..	9	91
Ghanchi	4,070	..	100	..
Minor Musalman castes with foreign strain ..	15,071	40	60	..
Other Musalman castes (local converts) ..	11,119	..	100	..
Total Indigenous Musalmans	160,493	35	61	4

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We can now compare the results arrived at according to these proportions and the census returns. A second marginal table is given, shewing the very close correspondence between the two sets of results. On the whole Gujarati has slightly more speakers amongst Musalmans than one is led to expect from the facts of the Caste Table. As to Western Hindi and Kachchhi, the two sets of figures correspond fairly closely. In regard to other languages on the other hand, the estimate is more than double of the actual. The main reason for this circumstance is that Afghans, Balochis, Arabs and Makranis number 1,835, while the corresponding figure for the languages which they are supposed to speak is only 306. Possibly the language figures are unreliable in this respect, but then it is a fact that Makranis and Arabs long resident in this country have adopted Urdu as their home-tongue.

Language	Actual number of Musalmans returned as speaking	Estimated number of Musalmans supposed to speak	Variation on actuals
Gujarati	98,669	96,581	— 2,088
Western Hindi ..	55,588	56,245	+ 657
Kachchhi	6,900	6,885	— 15
Marathi	80	..	— 80
Other languages ..	1,091	2,617	+ 1,526
Total ..	162,328	162,328	..

A word as to the figures for 1911. The total number of Western Hindi speakers in that census was 73,159. Thus the speakers in this language have presumably declined by 14·7 per cent. in the last 10 years. This census decrease however does not seem to represent the true facts of the case. Musalman speakers of Urdu in 1921 are estimated at 56,245. The castes in which Urdu is generally or largely prevalent numbered 81,966 in this year. The corresponding figure for 1911 was 84,332. If we apply the same proportions for that year, as we have done in the above table, we find the approximate number of Musalman speakers of Western Hindi in 1911, which is 59,100; compared to which the corresponding figure for 1921 shows a decrease of about 5 (or 4·8 per cent). The total of these castes also shows a decrease of about 3 per cent. It is inconceivable then that the real decrease in the figures for Western Hindi should be so large as 14·7 per cent. Hindu speakers of Western Hindi are about 6,700 in this census. If the figures of 1911 are correct, then one would have to suppose the number of Hindu speakers of this language to be as high as 14,060. That means that these Hindu speakers should have declined by over 60 per cent. which is hardly likely. It would have been very useful to have the figures of language-distribution by religion for 1911 also. But I am afraid these are not available. We have therefore to use indirect means to find them out. Immigrants from the United Provinces, the Punjab and Central India Agency have declined from 6,241 to 5,745. It is true also that by the reduction of State Army effectives, a few Pardeshi Sepoys have left the place. In any case I do not think the number of Hindus speaking the Midland language could have been larger than 10,000 in 1911. This would give a total of 69,100 for Western Hindi for that year, instead of the census figure of 73,159. Presumably therefore over 4,000 persons were wrongly entered as speaking that language. The true variation since 1911 then comes to 9·5 per cent. The 1911 figures must therefore be convicted of vitiation, in that the Western Hindi figures wrongly included many speakers of Gujarati, owing to the loose interpretation of "Musalmani."

It will be noticed that in the above analysis, we have carefully avoided using terms like Urdu or Hindi. We have preferred the more generic term, Western Hindi, and there is justification for our doing so. In this State, the real distinction between Hindustani, Hindi and Urdu is not known or understood. Only the total of these three can be accepted as correct. The separate figures for Urdu, Hindustani and Hindi are not reliable.

318. Variation in Marathi—Coming to Marathi, we find the proportion of speakers in that language has steadily declined since 1891. In that year, the proportion of Marathi speakers to 10 mille of population was 214. In 1901, the proportion declined to 198. Ten years later, there was a further drop to 171. In 1921 the proportion is only 152. In absolute figures, the variation in 1911 came to a decrease of over 7 per cent. Perhaps this was to a certain extent due to better classification. Speakers of Varli and Kathodia, and also Khandeshi—dialects which are allied to Marathi—must have been wrongly included under it. In 1921,

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the speakers of Marathi show a further decline of about 7 per cent. That this was due to a real decrease is shown by the marginal table which gives the comparative strength of Deccani castes which are supposed to speak Marathi for the last two censuses. There is an almost general decline in all castes. The census decrease amounts to 20·3 per cent. But as shewn in para. 402 later on, the census figures of Dhimars in 1911 are not correct. The true strength of Dhimars is there estimated to be only 3,056. The Deccani total for that year is thus reduced to 38,641 and the rate of decrease to 15·5 per cent. The decline in Marathi speakers comes to only about 7 ; and it will also be seen that the number of Marathi speakers corresponds in 1921 very closely to the number of Deccan castes supposed to speak it. In 1911 the correspondence was not nearly so close. There is no hesitation therefore in accepting the 1921 figures for Marathi, and languages, generally as more accurate.

Name of Caste	Strength in 1921	Strength in 1911
Bhandari	200	205
Deshastha Brahman	4,933	6,464
Kokanastha Brahman . ..	3,259	3,214
Karhada Brahman	852	1,265
Devrukha Brahman	243	553
Yajurvedi Brahman	387	504
Dhimar	2,040	5,410
Dhangar	259	602
Maratha (Kshatriya and Kanbi)	15,754	16,144
Prabhu	2,285	3,153
Sonar	568	539
Kokani Kanbi	807	1,666
Mahar	608	703
Gurav	103	176
Kasar	151	78
Shenvi, Shimpi, Gauli, Gondhali, Ghadsi, Holar, Komti, Teli, Vidur, etc.	211	319
Total	32,660	40,995*

Taken by religion, the distribution of Marathi offers one or two interesting features. The vast majority of Marathi speakers in the State are Hindus. Of 32,660 Deccani Hindus, supposed to speak the language about 31,900 have returned it as their home-tongue. About a thousand of these therefore may be said through long residence in Gujarat to have taken to Gujarati as the language of their normal use. In 1911, the difference between the strength of Deccani castes, and the actual number of Marathi speakers was much larger, namely 6,161 according to the census, or 3,807 according to our estimate. It is true that long domicile in Gujarat has had the effect of undoubtedly transplanting Marathi by Gujarati in a few Deccani homes and some Deccani castes like Dhimars. But that such a large number of them should have taken to Gujarati in 1911 does not seem probable ; again, as this process of "Gujaraticisation" should be on the increase with longer residence, if one accepts 3,807 as the measure of the extent of this process in 1911, one would expect an increase in 1921. There is however a large decrease. The situation as disclosed in 1921 is certainly nearer to the truth ; and one must also conclude that a proportion of Deccanis—about 8 per cent.—must have been wrongly entered as speaking Gujarati in 1911. I would be inclined to put the number of Marathi speakers in 1911 at 37,800 or thereabouts.

Religion	Number of Maratha speakers
Animist	401
Musalman	80
Others (mostly Hindu)	31,918

319. Variation in Kachchhi.—11,439 persons were returned in this census as speaking Kachchhi. Of these 10,127 or over 88 per cent. are to be met with in the Kathiawad division (particularly in Okhamandal *Prant*). Of the total Kachchhi speakers, 6,900 are Musalman and 4,539 are Hindus. As shewn already the Musalmans are all Cutchi Memons and Kathiawadi Khojas. Of the Hindus the Bhatias, Okha Luhanas, and Kathiawari Khatris and Kharwas are the chief castes among whom this language is spoken. From the Caste Table (Imperial Table XIII) we learn that there are 5,220 persons belonging to those castes in Amreli and Okhamandal *Prants*. The Luhanas as they go further east into Gujarat adopt Gujarati as their home-tongue. It is only in Okhamandal, in close proximity to Cutch that they have kept up the Kachchhi language. Bhatias speak a special dialect of Kachchhi referred to in the Linguistic Survey on p. 212, Vol. VIII, part I. It appears to be ordinary Kachchhi with a free admixture of Gujarati words.

* This estimate differs from that given in para. 445 of the 1911 Report. The present estimate is based on an exhaustive list of Deccani castes. In 1911, Dhimars (Deccani fishermen) and Kokani Kanbis do not appear to have been reckoned in the total. The omission, no doubt, led Rao Bahadur Govindbhai to imagine that there were more Marathi speakers than Deccani castes. The truth however appears from the above to be quite the reverse.

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In 1911 the figures for Kachchhi were 15,268. Thus there is a decline of 25 per cent. in this census amongst the speakers of the language. The number of Kathiawadi Memons and Khojas, Bhatias, Okha Luhanas and Kathiawadi Khatris and Kharwas in 1911 was 12,176. It is a known fact that the Kathiawadi Luhanas are being subjected to a progressive "Gujaraticisation". In 1921, we have stated that the Kachchhi speakers amongst them are limited to those Luhanas who live near Cutch in Okhamandal. In 1911, the vogue of Kachchhi amongst Kathiawadi Luhanas must have been larger. If we assumed the whole of Kathiawadi Luhanas to be Kachchhi speaking in 1911, our estimate of 12,176 is raised to 16,910. If the figures are to be believed, therefore, we must conclude that the majority of Luhanas in the Kathiawad division of the State spoke Kachchhi in 1911, and have given it up since then for Gujarati, only the Okha Luhanas must be still supposed to have retained Kachchhi as their native tongue.

320. True Variation since 1911.—The figures for the main languages have now been scrutinised by comparison with the castes and communities who are supposed to speak them. The errors of classification in regard to Banjari and Khandeshi have been also noted. The true figures for Marathi and Western Hindi in 1911 have been also estimated. A marginal Table is given embodying the main results of the discussion and showing in the last column the true variation since 1911. The real decrease in Western Hindi appears to be less, and that in Marathi, to be more, than the census decrease since 1911. The figures for Khandeshi in 1911 are only a guess.

Language	Census figures for 1921	Adjusted figures for 1921	Census figures for 1911	Adjusted figures for 1911	True variation since 1911 (per cent.)
Gujarati (Standard)	1,867,343	1,867,343	1,756,307	1,754,900	+ 6·4
Bhili and Khandeshi ..	145,856	145,780	146,347	146,097	— 0·5
Western Hindi	62,367	62,367	73,159	69,100	— 9·7
Marathi (Standard) ..	32,399	32,399	34,834	40,300	— 19·6
Kachchhi	11,439	11,439	15,268	15,268	— 25·1
Rajasthani	4,453	4,529	3,410	3,660	+ 24·0
(Khandeshi)	..	(1,103)	..	(1,000)*	..
Other languages	2,665	2,665	3,473	3,473	— 23·3

*In round figures, only a guess.

321. Subsidiary Table III-A—The discussion in the preceding paragraphs about the correspondence between Language and Caste returns is summarised in Subsidiary Table III-A. There we can see at a glance how far the estimated number of speakers differs from the actual census returns. Our estimates fall short of the census figures principally in Gujarati, where the excess of actual speakers over estimated amounts to 114,299. In regard to English, a few Goans—and one Bengali—have entered English as their home language. In regard to Gujarati, it must be remembered, that the estimate is arrived at by totally excluding Animists and also those of the Animistic tribes who have returned Hinduism as their religion, but as we have found from above 33,152 Animists have returned Gujarati as their language: presumably 78,873 from the Hinduised section have also adopted Gujarati. These make up a total of 112,025. The rest is made up almost entirely by gains from Western Hindi, Marathi and Kachchhi. The Western Hindi speakers are less than the estimate by 756; on the other hand, the speakers of Pashto, Balochi and Arabic are less than the estimate by 1,529. This difference must be credited to the influence of Urdu, as most of these immigrants after a time take to that language. Of the 112,591 members of aboriginal tribes who speak other languages than their own tribal dialects only 401 speak Marathi and 174 speak other languages, the rest speaking Gujarati.

322. Some considerations on Classification—In the above discussion of figures, the classification laid down by Sir George Grierson has been strictly followed. In regard to this classification, certain considerations will have now to be mentioned, for which purpose we shall have to leave aside figures for a bit and plunge into past history and comparative grammar and philology. In the scheme adopted in the Linguistic Survey, as also in the latest pamphlet issued by Sir George Grierson, Gujarati is included with Western Hindi in the Central group of the Inner Sub-Branch of the Indo-Aryan Branch of Languages; Urdu, Hindustani and Hindi are therein classed as dialects of Western Hindi. Bhil dialects

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and Khandeshi are included along with Gujarati in the Central Group: Kachchhi is put in the North-Western group of the Outer Sub-Branch as a dialect of Sindhi and Marathi is treated along with Sinhalese as members of the Southern Group of the Outer Sub-Branch. These are the main languages with which this State is concerned.

This classification involves certain consequences the importance of which must be realised. In the first place, it brings Gujarati into far more intimate nearness to the Midland language than Awadhi, for instance, with whose vocabulary that of the other dialects of Hindustan is very largely identical, and whose contribution to the common literature of Hindustan has been as great, if not greater, than that of its Western partner. In the second place, it has resulted in snapping the ancient ties that bind Gujarati with Kachchhi and through it, with that group of North-Western languages, from the speakers of which a great portion of the Gujarati population trace their descent. In the third place, the classification loses sight of the numerous strands of affinity that exist between Gujarati and Maharashtri on the one hand especially through the cultural influences of Jainism, and Magadhi on the other through their common Vaishnavism for one thing and their phonetic and grammatical resemblances. Lastly it must be said that Sir George Grierson was influenced in his classification as much by his preconceived notions of Indo-Aryan origins, as by the somewhat artificial classification of Prakrits and Apabhramsas favoured by the Indian Grammarians.

323. Grierson Classification based on his Theory of Indo-Aryan Movements—First as to history. It was Dr. Hoernle, I think, who was the first to suppose that there were two waves of Indo-Aryan immigration into India. The first wave came probably by sea, it was assumed, in the prehistoric period, and the second came later from the North-west through land and driving itself through the Punjab to the *Madhyadesa*, it thrust itself as a wedge into this other prehistoric Aryan group and drove them to what is called the Outer Band. That there were two ethnic strains amongst the Aryas is supported by the evidence of the Vedas themselves. There were the Rishi or the priest-poet clans such as the Angirasas and Vashishthas and the others were the warrior tribes such as the Yadus, Turvasas and Purus. This racial differentiation, it may be also admitted, stamped itself on the language of the Indo-Aryans. But the point of dispute is the interaction of the one on the other. Sir George Grierson is of opinion that the language of the Midlands " received a constant literary culture." It was the direct ancestor of the Sauraseni Prakrit and Apabhramsa from which the dialects of Western Hindi are descended.

" Round the Midland and on three sides—west, south and east—lay a country inhabited, even in Vedic times, by other Indo-Aryan tribes. This tract included the modern Punjab, Sind, Gujarat, Rajputana with the country to its east, Oudh and Bihar. The various Indo-Aryan dialects spoken over this band were all more closely related to each other than was any of them to the language of the Midland.....In fact at an early period of the linguistic history of India there must have been two sets of Indo-Aryan dialects, one the language of the Midland and the other that of the outer Band.....As time went on, the population of the Midland expanded and forced the Outer Band into a still wider circuit. The Midland conquered the eastern Punjab, Rajputana (with Gujarat, where it reached the sea) and Oudh. With its armies and its settlers it carried its language, and hence in all these territories we now find mixed forms of speech. The basis of each is that of the Outer Band, but the body is that of the Midland."*

In this statement, Sir George Grierson attempts to fit in his sense of linguistic differences to an elaborate reconstruction of Indo-Aryan movements which has little historical evidence for its support. As Prof. Ramaprasad Chanda rightly points out in his monograph on *The Indo-Aryan Races*, Eastern Punjab (or the ancient Usinara) was not in the Outer Band at all but formed an integral part of Vedic Aryandom. He quotes an ethnographical list from the Aitereya Brahmana in which the Vasas, Kurus and Panchalas are included with the Usinaras as part of the " firmly fixed middle country (*asyam dhruvayam madhyamayam disi*)." There was no question therefore of the conquest of the Punjab by the Midland. As to the other countries, there is little historical evidence to support the statement that " with its armies and its settlers it carried its language." Whether the Midland Aryans came later than the other group of Aryans, or whether they preceded them,

* Art. " Indo-Aryan languages " by Sir George Grierson, p. 488, Vol. XIV, Encyc. Britt., 11th Edition

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is one of those problems that have not yet emerged into shape from the cloudland of speculative ethnology. But at the same time, there is no reason to suppose the Vedic Indo-Aryans to be a conquering band of colonisers, before whose might the nations of the Outer Band rapidly gave way. On the other hand, such traditions as we have point to the other direction. Gujarat or the ancient Anartta was under the rule, if the Puranic lists are to be believed, of a scion of the Yadavas even down to Buddhistic times. Kathiawad or Saurashtra continued under the rule of the so-called Rakshasas in the Epic period. We have historical evidence of the swooping down of the Gurjaras from the Western Punjab, across the Aravallis, through Malwa to Gujarat. The Scythian period of domination also left its impress no doubt on the heterogeneous Gujarat population. The Chalukyas, it is known, did overrun the country from the south; but there is no evidence of any conquering horde coming from the Madhyadeśa and imposing its language on Gujarat. The short lived imperialism of Harsha, " the only native of Madhyadeśa who ever succeeded in subduing " the countries of the Outer Band did indeed result in the overrunning of Gujarat for a little while ; but after his death his empire crumbled into small kingdoms. There is little doubt that the nations of the Outer Band belonged to the dominant groups amongst the Indo-Aryans. The same passage as above quoted from the Aitereya Brahmana also points out that the nations of the Middle country were consecrated to " kingdoms," *i.e.*, small states, and that the other nations (mostly of the east, *prachyam diśi*) were given to *samrajya* or Empire-States. This points to the greater power of the Outer Band. Again one of the most significant events in Indian history is the rise to power of the Nandas. As Prof. Chanda says, " the subjugation of Vedic Aryandom by a low-born conqueror from the semi-barbarous Māgadha probably contributed much more towards the overthrow of the Vedic culture than the teachings of Buddha and Mahavira." Then followed the Mauryas, the historical Nāga and Gupta dynasties with the Scythian interlude in between. All these powers belonged ethnically to the Outer Band. " It was not therefore the conquering armies of the Midland, but the armies and settlers from Māgadha and other Outer countries that carried their languages to Oudh and other places where the mixed languages are now spoken."

324. Affinities of Gujarati with the Outer Band group.—Later researches therefore enable us to conclude that the present position of the languages like Gujarati is not so much the result of the superior impact of the Madhyadeśa on the Outer Band, as of the reverse. Whatever superimposition from the Midland has happened is of a much later date. In the Linguistic Survey, Sir George Grierson accepts the authority of the grammarian Hemachandra and traces the modern Gujarati to the Nāgara Apabhramsa, a language closely akin to the Saurasena. Hemachandra was a great Jaina Acharya who flourished in the 12th century A. D. The Nagara Apabhramsa takes its name from the Nāgar Brahmans, an exclusive literary caste, which exercised unbounded influence on the growth and development of the Gujarati language. Here was the impact of the Midland, not communicated through armies and conquering settlers, but by the literary influence of a caste, which though probably not descended from the Midland constituted itself as the special repository and transmitter of the culture of Vedic Aryandom. This Nagar caste forged the literary dialect of Gujarat perhaps through the *Mugdhāva bodh mauktika**—written anonymously by a pupil of Devasundara shortly before the appearance of Narsinh Mehta (circa 1400). This literary dialect has adapted itself as far as possible to the language of the people and has gradually developed into the spoken language of the educated sections of Gujarat, and the medium of its literature. But with all that it has remained absolutely distinct through the centuries. Any one with the slightest acquaintance with Gujarati will mark out at once the characteristic marks of this dialect—its Sanskritisation, its periphrases, its otiose clarity of enunciation—from the bulk of Gujarati speakers. In its characteristic accent the Nāgar dialect differs widely from the intonation of the other castes (even educated sections amongst them). Sir George Grierson says that the base of Gujarati is some Outlandic language (probably north-western) but that its body is Midland. The truth seems to be, if the relative position of the Nāgar dialect with reference to the indigenous dialects of Gujarati is more closely studied, that not only the base of it but a goodly proportion of its limbs and its accent and distinctive manner belong to the Outer Band, while its adornments and its fripperies are from the Midland. Sir George Grierson himself points out numerous evidences of the affinities of Gujarati to the north-western, eastern and southern Groups, but is not influenced by them in his classification. In the Encyclopædia Britannica article, from which the extract in para. 323 has been quoted, he gives a table, in which he traces Gujarati from what he calls the Gaurjari Apabhramsa† and

* The book in question was written in 1394 A.D. and appears to be an elementary Sanskrit Grammar, written in an old form of Gujarati. Sir George Grierson finds in it a close connection with the Gaurjara Apabhramsa.

† In the Language Chapter of the India Census Report of 1901, Sir George Grierson regards Gaurjari as a dialect of the Nagara Apabhramsa.

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places it amongst intermediate languages corresponding apparently to the Mediate Sub-Branch of his Survey along with Eastern Hindi (Awadhi), Rajasthani, Pahari and even Panjabi. The classing of Gujarati along with Eastern Hindi would have been more justifiable than the arrangement pursued in the Survey. It is in defence of the suggestion that Gujarati (with Bhili and Khandeshi) should in future be definitely allocated to the Mediate Branch that attention is directed here forcibly to its affinities with the languages of the Outer Band.

325. Phonetic resemblances with the Outer Band—That such affinities are many and highly significant cannot be denied. Space permits us only to point out the most important. First as to phonetics. The Sanskrit syllabary imposed on the Gujarati language is inadequate for all its sound-requirements. The short *e* corresponding to *a* in *bat* and the short *o* corresponding to *a* in *fall* are very common to Gujarati; and in colloquial Gujarati not unlike colloquial Bengali the Sanskrit *a* frequently becomes the broad *ô* and *i* becomes *e*. The broad *ô* is common not only in Bengali and Oriya, but also in Lahnda and in the Konkani dialect of Marathi. The Gujarati preference for *ô* instead of an has its counter part in Sindhi and Assamese. The short *ai* which is a feature of the Lahnda vowel system occurs also in Gujarati very frequently, as in *bhăi*, pronounced without the long stress on *a* as in Western Hindi. Again the sibilants tend in colloquial Gujarati as in Sindhi and Bengali to be pronounced like *sh**. In Bengali this characteristic is regarded by scholars as a legacy from the Magadhi Prakrita. As to aspiration, Sir George Grierson points out as a peculiarity of Kashmiri phonetics, the absence of sonant aspirates. Thus *gh* becomes *g*, *jh* becomes *j*, *dh* becomes *d*, and *th* becomes *t*. This absence of aspiration is well-marked in colloquial Gujarati *e.g.*, *ekatu* for *ekthu*, *hāte* for *hāthe*. The Nagarists have retained the aspirate in their orthography with an eye to purity of lineage : there is a whole literature of controversy scattered in the pages of the Gujarati magazine *Vasant* regarding this aspirate. Much literary blood has flown over the spelling of the word *ame* (we). Now this dropping of the sonant aspirate is a marked feature of the Eastern Bengal dialect where *ghar* becomes *gar* and *ghoda*, *gora*. The change of *s* into *h* is a well-known phonetic peculiarity with Northern Gujarati and also in Bhil dialects ; thus *mānuh* for *mānas* (man), *hūraj* for *sūraj*. This peculiarity is present in the Pisacha languages as well as in Eastern Bengali and Assamese where *srasur* (father in-law) becomes *hoūr*. and *sakal* is turned into *hogol* or *hoggol*. Examples of the interchangeability of *n*'s and *ṅ*'s, of *metathesis* (*i.e.* of interchange of consonants in the same word), of tendency to double consonants and similar phonetic peculiarities can be quoted from Gujarati as well as from the Outer languages.

One most important point remains to be noticed. Sir George Grierson rightly insists on *epenthesis* as an important differentiating mark with Dardic or Pisachi languages. By *epenthesis* is meant simply the change of the sound of a vowel by the influence of one in the next syllable Thus *kukkuri* (hen) becomes *kukkir* by attraction to the final *i*. Sir George Grierson does not notice this in Gujarati but I submit that evidences of a like vowel change are numerous in that language. In the phrase *ene gher* for the full form *ena ghare* (in his house), we see how the oblique case termination *a* of *ena* is changed to *e* and so also *ghare* becomes *gher* by attraction. In the Surati dialect of Gujarat, numerous instances of vowel changes happen which resemble *epenthesis*. Sir George Grierson mentions some but does not notice their significance. In regard to forms like *lavyo*, *karyo*, *chalyo*, *maryo*, the Surati changes them into *laivo*, *kairo*, *chailo*, *mairo*, etc. Exactly the same thing happens in Eastern Bengali where the literary Bengali *koriya*, *choliyā*, *ašiya* are transformed into *koira*, *choila*, *ayeśa*. This peculiarity is undoubtedly a north-western characteristic and governed by the same principles as *epenthesis*.

326. Grammatical resemblances—Grammatical resemblances are no less remarkable. In certain essential directions, Gujarati has no correspondence with Western Hindi. Some of the most prominent of these dissimilarities can only be mentioned. The first is the existence of the neuter gender. This is noted by Sir George Grierson, who mentions it as one of the points wherein Gujarati differs strongly from Western Hindi and agrees with Marathi, an outer language. Gujarati also follows, says the same authority, " the Outer circle in one of its most persistent characteristics in having the oblique form in *a*, which is quite strange to Western Hindi." The use of the help verb, *chhu* (I am) in the present and perfect and future (gerundial) tenses occurs also in various forms in the languages of the Outer Circle. In the Bengali conjugation, this help verb is fused into the participle to form one word. In this respect colloquial Gujarati follows at least in pronunciation if not in spelling. Sir George Grierson maintains that Gujarati declension as well as conjugation agrees generally with Western Hindi, in that it is analytical, *i.e.*, has recourse to help-words and post-positions. He however admits the important exception in respect of the Gujarati dative and genitive cases. Here Gujarati follows the practice of the Outer Circle, which is synthetic, *i.e.*, forms its cases by means of inflectional terminations. The most synthetic of Indo-Aryan vernaculars are no doubt Marathi and Bengali, and in comparison, Gujarati is certainly analytical in its manner of declension. But I venture to think that Sir George Grierson based his opinion too much on the stereotyped formularies of the grammarians and not on the actual facts of living speech. These facts point indubitably to a pronounced synthetic tendency in Gujarati. The help-words in the conjugation are only required

* In Surati dialect, however, the reverse tendency of pronouncing all *s*'s as simple *s* is seen.

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in the present continuous and the participial tenses. Even here in colloquial speech and pronunciation, the words are so slurred and fused that they become one word. In Parsi Gujarati—which is only a developed form of the Surati dialect,—these syncopated forms are found throughout the participial as well as the future tenses. Here the practice has a striking resemblance to the clipped forms which are so common in colloquial Western Bengali. I am of opinion that this syncopation is part of the process of synthetisation which in some Outlandic languages may be taken to be a return to the earliest form of Primary Prakrit. *Karoch*, *karieeh*, *karech* *karšu* from Parsi Gujarati, and even such forms from the Standard Gujarati as *kehto'to*, *n'hoto* are examples of this widespread tendency. Gujarati conjugation is in its essence though not in its form synthetic. One or two other points can only be mentioned in this brief discussion. The formation of the simple future by-*s*, which obtains in Gujarati, is also found in Lahnda, and in some dialects of Rajasthani of which Jaipuri and Marwadi agree most closely with Gujarati. To quote again from the Survey on this important point : "One of the typical characteristics of Lahnda is the formation of the future with the letter-*s*. . . . There is nothing like this in Sindhi. . . . but the *s* reappears still further south, in Gujarati where we have *marśe*. The connecting link is Western Rajasthani immediately to the south of Lahnda. We thus have a line of languages with *s*-futures extending without a break from the north of Khagan, through the Western Punjab, and Western Rajputana into Gujarat." Historically this link is interesting for it traces approximately the passage of the Gujars into Gujarat.* Finally we will mention the case of the agential construction. The construction is an amplification of the Hindustani impersonal passive. In Hindustani impersonal passive construction, the object is put in the dative case, the participial verb into the masculine gender,and the subject is in the agential. In Gujarati, the verb is generally made to agree in gender and number with the object. In Marathi of the Konkan, there is the same idiom. These idioms are based on the fact that in the Midland language as well as in some intermediate and outlandic languages like Gujarati, Marathi and Sindhi, past and future participles are passive in their origin, and hence tenses in which they are used are to be construed passively. In Bengali, however, this passive origin has been forgotten, and a synthetic past tense has been evolved which can be conjugated as in Sanskrit. In Gujarati, in certain transitive verbs, *e.g.*, *samjyo* (I understood), the subject is put in the nominative and not in the agential. These verbs are not many, but at any rate they represent a stage further than the Western Hindi in the development towards a synthetic conjugation.

327. Proposed Classification—The above discussion emboldens us to suggest that Gujarati should be separated from the Central Group, and that Jaipuri and Marwadi (or at least Marwadi) should be assigned to Gujarati. Their close resemblance to it has been already mentioned above and it has been also fully acknowledged by Sir George Grierson himself (*vide* p. 15, Vol. IX part II of the *Linguistic Survey*). Gujarati scholars have claimed Marwadi as a dialect of their language and they have reason. Gujarati with Bhili and Khandeshi should be classed as an Intermediate Language in the Mediate Branch, along with Eastern Hindi. There remains Kachchhi. Gujarati scholars claim it also as one of their dialects. It has numerous evidences of borrowings from the Gujarati of which the use of the Gujarati conjunctive participle in *ine* is very common. The Survey states the main facts in this matter in page 184 of Vol. VIII, part I. There are two sub-divisions of Kachchhi,—Bhatia,which has been mentioned already,and Kayasthi Kachchhi. The latter is based on Kachchhi but much mixed with Marwadi and Gujarati. These two come very close to Kathiawadi Gujarati. But there is one insuperable obstacle about classing Kachchhi with Gujarati or the mediate languages generally. It is in regard to the treatment of the double consonants derived from the Prakrit. In most languages of the Inner and Outer Branches, the practice is to drop one of the double consonants and lengthen the vowel preceding. In Kachchhi as well as in Sindhi, this compensatory lengthening does not happen, although one of the consonants is dropped. Thus we have *hath* (hand) not *hātth*, or *hāth*, *kān* (ear) and not *kann* or *kān*. This is one of the most distinctive peculiarities of the Dardic languages ; Kachchhi therefore belongs to Sindhi and the North Western Group.

328. Linguistic and literary influences on Modern Gujarati and Marathi—Linguistic influences—Turning from these considerations, we have now to see how far modern influences are moulding the language and literature of Gujarati and Marathi. The most important of linguistic influences is that complex of changes that has resulted from the impact of Europe on India. English education has set in new ideas and institutions and with these have come in also the many new improvements and needs of material civilisation. It is common knowledge that many English words have thus passed current into all the Indian languages. In the last Report Mr. Govindbhai gave a long list of such words which have become naturalised into

* Sir George Grierson however thinks that the *s*-future had its origin in the inner circle,*vide* page 335 footnote, India Census Report of 1901. But the explanation given above seems more plausible.

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the Gujarati language. Mention must also be made of the share which the Portuguese language has in enriching the vocabulary of Marathi and Gujarati. It must be remembered that the Portuguese connection with India has been longer and in a sense more intimate than the British connection. Their proselytising zeal brought whole communities on the coast to the banner of their faith and thus served as the medium for adoption of Portuguese words in Gujarati and Marathi languages. But in this commerce with the West, it must be mentioned that Marathi has been more conservative than Gujarati; and in both languages, there has also gone on, along with this tendency to adopt foreign words, the contrary desire—though confined only to the *literati*—to rescue the indigenous languages from this foreign invasion. But such attempts have hitherto been futile. In Mr. Ramanbhai's *Bhadram-bhadra*, this literary purism which goes to the extent of translating "ticket" by *mulya patrika* has been ridiculed almost to extinction. In one way however, Baroda State may be said to have assisted this movement of linguistic purity. It has all along strenuously insisted on official correspondence to be carried on as far as possible in Gujarati or Marathi. This policy has given rise to the coming of new words to suit the needs of the administration—*samiti*, *mantri mandal*, *nyayadhishi*, *daftari shera*, *vela-patrak*, *nondh-ank*, *tippan* for Committee, Council of Ministers, Court, endorsement, time-table, register number, memorandum and so on. These *tatsama* words, as Sir George Grierson will call them, are unfamiliar at first, but are being gradually acclimatised into the language. An official "jargon" in Gujarati and Marathi is thus being created. At the same time Gujarati has taken its share, under the patronage it must be said of this State, in the work of devising a common stock of scientific and technical words in the Indian languages, which is being sedulously pursued by the literary academics of the other three principal Indo-Aryan vernaculars—Bengali, Hindi and Marathi. A committee has been at work for years over this most important question, and their first fruits are contained in the *Sayaji Vaijnanik Śabda Sangraha*. In the preparation of this book, which is only a preliminary to a larger and more ambitious undertaking, they assure us that they have had the assistance of the scholars and scientists from other parts of India.

A subtler influence than that evidenced by the wholesale importation of English words is seen in the growth of "Anglicisms" in such weird phrases and idioms as *jaher bāndhkām* (public-works), *bin-jarurīāt dhil* (unnecessary delay), *dhyān khenchvāman āvechhe* (attention is drawn), *rahat no dam khānchse* (he will breathe a sigh of relief), etc. These idioms are the result of English education and also often necessitated by the needs of the official "jargon".

329. Literary Influences—Coming now to literary influences, here again the most important are from the West. The expansion in form and theme observable in modern Bengali literature is also seen in Gujarati and Marathi. Not only has the output increased but their variety has also become wider. The old religious element still survives but the governing interest in literary activity is now mainly secular and belletristic. Some of the most popular branches, the so-called Gujarati *Naval katha*, and the Marathi *Kadambari*, are also I am afraid the most inferior. In this respect however and also in regard to the acted play, Marathi, especially in the work of Hari Narayan Apte, Gadkari and others, is superior to Gujarati. In biography, history and other serious works of research, Marathi also now takes the lead. In poetry however, modern Gujarati has shewn greater variety and richness of achievement. Under European influence, new forms have developed—like the lyric, the sonnet and *vers libre*, the last represented in the fine work of Mr. Nanalal, the younger Kavi. The Persian *ghazal* which owed its present vogue mainly to the genius of Kalapi has now also been firmly established in Gujarati poetry. Literary criticism has reached a high level in the *Kavita ane Sahitya* of Mr. Ramanbhai Nilkanth. Works on technical subjects like mechanical engineering are beginning to appear under the pressure of modern needs; and the present day demand for teaching through the medium of the vernacular has flooded the market with school-books, popular series of tabloid knowledge, translations, etc. Finally Gujarati literature has ceased under modern influences to be the monopoly of a Brahman coterie. In a recent book called *Sachitra Sāksharmāla-dehi ane videhi*, which included notices of even living authors, I found out of a total of 192 names that 131 were Brahmans, 33 were other Hindus, 24 Parsis and 4 Musalmans. Of this total again 180 were men and 12 women. The Non-Brahmans are thus beginning to contribute in a larger measure to literary development.

The modern movement in Marathi letters was started in the early sixties and seventies with the so-called Sāstri school who principally worked at translations from the Sanskrit. If is noteworthy that here, as in every other modern Indian language, the immediate effect of English education was to turn men's minds to the ancient storehouse of Sanskrit literature. These translations were followed by adaptations from Shakespeare and Moliere by Agharkar, Deval and others, which began the new belletristic movement in Marathi. In poetry, although less varied in its achievements than Gujarati, Marathi shows distinguished work from Tilak, Govindagraja, Kesavasuta and Tekade.

In journalism and periodical literature, Marathi started earlier although now both the languages show fairly equal development. The achievements of Marathi journalism are now

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rivalled in force and intensity by recent enterprises in Gujarat which have already established a landmark in Gujarati prose.*

330. Literary and Journalistic Activity in the decade in the State—From this brief general notice we may now proceed to give a few details of the books that have been published in the last ten years in the State. The total number of books published in the State increased from 1,148 in 1901-10 to 2,476 in 1911-20. Gujarati books, which naturally form the greater portion of the literary output in the State are now produced in much larger number than ever before. The increase in English books is also noteworthy. This literary activity is indebted in a large measure to State initiative. From 1891, the Educational Department of the State has kept up a translation section. At first its primary function was to have charge of the preparation of school text books and producing translations from English literature. In 1912, at a meeting of the Gujarati Sahitya Parishat, a munificent gift of Rs. 200,000 from His Highness the Maharaja Saheb was announced. It was decided from the interest of this sum to encourage publication of standard books on literature and general knowledge. Originally the idea was to produce translations of standard works from English or Sanskrit. Later the idea of encouraging original works of research was also developed in connection with the scheme. Two series were planned the *Sayāji Sāhitya Mālā* containing works meant for grown-ups and *Sayāji Bāla Jnāna Mālā* for the use of children. The subjects chosen represented a very wide range—Natural Sciences, technology, philosophy, economics, morals, religion, history of Political Institutions and Civilisations, literary criticism, biography, etc. At first the work was slow. Only about 5 books were published in as many years. In 1917 however, the work was taken up by a group of scholars and much progress has resulted. In all 298 books were planned for the two series. So far 87 have been published—66 in the Sahitya series and 21 in the Children's series. Of the total number of books plamned 247 are in Gujarati, 44 in Marathi, 5 in Hindi and 2 in Urdu. The books of the first series are of the nature of the Home University Library which is very familiar to every student of English literature. One of the most remarkable publications in the series is undoubtedly the standard work on Maratha History produced by Mr. G.S. Sardesai. Not the least valuable of the other works are the critical monographs on the classical Gujarati poets. And among translations is a literary *tour de force* on *Alice in Wonderland*. The *Vaijnanik Sabda Sangraha* has been already mentioned.

Language	Number of books published in	
	1911–20	1901–1910
Gujarati ..	1,801	1,023
English-Gujarati ..	51	..
English	206	99
Hindi	47	..
Urdu	82	..
Marathi	103	19
Other languages ..	186	7
Total ..	2,476	1,148

Journalistic activity is summarised in the marginal table. The nine weeklies in 1911 have decreased to seven. The competition of the Press in Bombay, Surat and Ahmedabad has left little room for journalistic activity here. Newspapers and Periodicals have therefore ceased to be profitable. These seven weeklies at present published are mostly in Baroda City of which the chief is the *Sayaji Vijaya*; only two weeklies are published from Navsari. Six of these weeklies are in Gujarati, and one in Marathi. The most important of the monthlies is the *Sahitya*. 25 of the monthlies are either in Gujarati or in Gujarati combined with other languages. The remaining monthly is in Marathi, devoted to physical culture. 15 of these magazines appear from the City. Of these 5 are devoted to religious topics, 3 are educational, 2 are law reports, 2 given to physical culture, 2 to literary and general interest and 1 to music. The two quarterlies are the two high-class journals mentioned in the Chapter on Religion which have been established under the

Kind of Newspaper or Magazine	1921		1911	
	No.	Circulation	No.	Circulation
Weekly	7	9,130	9	16,500
Monthly	26	19,125	24	15,100
Quarterly	2	800	1	300

* Coordinated literary activity in both these languages is shewn by the periodical sessions of *Sahitya Parishats* or Literary Conferences. In the last decade, the literary organisations of both Gujarati and Marathi held their conferences in Baroda.

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editorship of Prof. Widgery in connection with his Seminar or Comparative Study of Religions.

331. Interaction of Languages: *the lingua franca movement*—In the discussion on variation in linguistic distribution, mention was made of the gradual encroachment of Gujarati on non-Aryan languages and even on Marathi, Kachchhi and Urdu. In subsidiary Table X of Chapter VIII another aspect of this interaction is shewn. The purpose with which the State undertook to compile statistics not only about the vernacular in which a person was literate, but also about other language or combination of languages in which a person was at least able to read and understand printed books was to see how far the literary influences of Hindi and Urdu were prevalent in the State. The test laid down was intelligibility—how far a language not native to the State was understood among its population. But the difficulty lay in defining what the degree of intelligibility was to be. The Government order passed on my proposal recognised these difficulties full well :—

"The proposal of the Census Superintendent to supplement the test of literacy adopted in British India with another test for our own purposes of gauging the progress of compulsory education is wisely conceived. Only I would ask him to adopt the same, or a similar, but uniform test of gauging literacy in other languages. . . . Many people claim to speak Hindi, though they are not able to talk beyond a few sentences of dog Hindustani. It is not easy to fix a uniform lingual test for all languages ; but one uniform test for all people for each language is absolutely necessary to secure useful results."

The realisation of these difficulties led me to insist on some adequate test by which the influence of such extraneous languages could be gauged. Mere ability to speak such languages was not enough. Most Gujarat Musalmans can manage to speak some kind of intelligible Urdu. But few even amongst them, whose home-tongue it is, have a knowledge of its script or any appreciation of its literature. Again in regard to script, the *balbodh* (or *devanagari*) is very similar to the Gujarati script and it is also taught in the primary schools. Most Gujarati and Marathi literates therefore are able to decipher Hindi books written in the *Devanagari* script. But this was not enough indication of the hold of such languages. On the other hand, if we insisted on ability to read and write, that would not have been fair. Similarly the insistence on ability to speak in addition to the ability to read and understand, would have been hard also. A great many people both in Gujarat and Maharashtra are interested in the latest developments of Bengali literature. The vogue of Tagore in recent years has given an impetus to this movement. Numerous translations from the Bengali of the works of its standard authors have appeared both in Marathi and Gujarati. It would have been difficult to estimate the extent of this influence, if we insisted on the speaking test in addition to intelligibility. On a consideration of all these circumstances, we have finally adopted the test explained above. State Table XII gives the results of this enquiry. The figures are however far from reliable and can only be accepted as a rough indication of the interaction of languages.

Subsidiary Table X of Chapter VIII gives the main results for Gujarati and Marathi speakers only. Out of 259,340 persons literate or partially literate in Gujarati, 2,585 know Urdu in addition or 14 per 10,000 of Gujarati speakers. Those who know Hindi are 2,400 or 13 per 10,000 of Gujarati speakers. The persons able to understand Marathi are less than these ; only 8 per 10,000. Amongst Marathi speakers 563, or 174 per 10,000, are able to understand Hindi, 31 or 10 per 10,000 profess to know Urdu, and 5,325 persons or 1,644 per 10,000 know Gujarati. This shows how extensively Gujarati is known amongst Deccanis. Para. 290 of Chapter VIII showed that 1,385 male and 349 female literates amongst Deccanis are able to read Gujarati only. The want of Marathi schools in many places, and long residence amongst a Gujarati-speaking population, are the chief causes of this result. The accuracy of these figures however is very much open to question. Through errors of record or of compilation, many persons knowing Marathi and Gujarati may have been wrongly included under "Gujarati only". But that such cases exist there is no doubt. I have known of many cases of Deccani Gaulis and Mahars—such of them as take to education—who are only able to read and write or understand Gujarati, although they speak a kind of debased Marathi in their homes. I have also noticed the curious practice of some of these Deccani castes

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talking in Hindustani between themselves. As to Gujaratis who are able at least to read some language, the figures show that 177 males and 57 females although they speak Gujarati, are not able to read their language. A few Gujarati Vania families in Kadi *Prant*, from Sipor, Unjha, Vadnagar and other places, have long settled in the Deccan for business, and their families are known to have been brought up to read and write in Marathi. Some Musalmans have professed to know English and Urdu, and not Gujarati, although they acknowledge the last named language as their home-tongue. Amongst Musalmans, out of 28,037 persons, who are able at least to read and understand some language, 16,647 have acknowledged Gujarati as their mother-tongue and 8,855 have returned Urdu.

332. General Conclusions—Unreliable as the above figures are, they yet point to certain general conclusions. Through the exigencies of their residence literate Deccanis have generally learnt Gujarati, and most of them know how to speak it. Gujaratis however do not take kindly to Marathi, or for the matter of that, to any other language but their own. Musalmans generally are able to speak Urdu, but few of them know how to write it. Hindi does exercise a considerable influence on the educated sections of the people, but its spread cannot be said yet to be nearly so extensive as English. Its claims to be the *lingua franca* are beginning to be increasingly pressed ; there is general desire also to include Hindi as a second language in the schools; much of the old bitterness of the Hindi-Urdu controversy has softened down with the growing cordiality between educated Hindus and Musalmans. The latter have tended to simplify their Urdu and abjure their Persianisms ; while the Hindu is prepared to give up the Sanskritisation which distinguished the early history of the high Hindi movement. The present attitude of Gujaratis and Deccanis to this question may be described in one word : "sympathetic inaction." They are prepared to concede about the script at least in their printed books, but no Marathi is willing to part with his Modi,* nor is any Gujarati anxious to abolish his own script altogether. Under these circumstances, there is little evidence of the Common Script movement making much headway at least in Gujarat. With the death of the Hon'ble Mr. Krishnaswamy Sastri, and Justice Sarada Charan Mitra, the two leaders of this movement, it has more or less become inactive. On the other hand, there is much activity in the direction of what may be called co-operative scholarship, appreciation of one another's literature, and a united endeavour to improve the tone of their respective languages, recover their lost treasures and to restore the people to a right attitude towards their ancient civilisation.

* But many Marathi speaking people, long resident in Gujarat, do not know the Modi script.

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SUBSIDIARY TABLE I—Distribution of Total Population by Language

Language	Total Number of Speakers		Number per mille of the population of the State	Where chiefly spoken
	1921	1911		
1	2	3	4	5
I Indo-European family Aryan Sub-family Indian Branch (Central Group)				
1. Gujarati	1,867,343	1,756,307	878	All the divisions
2. Bhili languages ..	145,856	146,347	68	South Gujarat (Rani Mahls) and North Gujarat
3. Hindi	7,762	3,203	4	City, Central Gujarat and Kathiawad
4. Urdu	52,770	64,306	25	City and Central Gujarat
5. Hindustani	1,835	5,629	1	City and Central Gujarat
6. Rajasthani	4,453	3,410	2	Central Gujarat and City
(Southern Group) ..				
7. Marathi with dialects.	33,165	36,145	16	Baroda City and South Gujarat
(N. W. Group.)				
8. Kachchhi	11,439	15,268	5	Kathiawad
9. Lahnda and Sindhi	661	861	..	Kathiawad, North and Central Gujarat
II.—**Other languages** (including minor languages of Indo-European family)	1,238	1,322	1	
	2,126,522	2,032,798	1,000	

Note.—Other languages include representatives of the Eranian Branch, the Dravida and Andhra groups, the Eastern Group of the Indian Branch, and English, Portuguese and Arabic speakers.

SUBSIDIARY TABLE II—Distribution by Language of the Population of each Division

Natural Division	Number per 10,000 of the population speaking							
	Gujarati	Bhil dialects	Urdu	Marathi	Kachchhi	Hindi	Hindustani	Other Languages
1	2	3	4	5	6	7	8	9
Baroda State	**8,781**	**686**	**248**	**152**	**54**	**37**	**9**	**33**
Central Gujarat exclusive of City ..	9,229	369	293	39	5	24	9	32
Baroda City	5,805	45	1,212	2,399	33	281	62	163
North Gujarat	9,745	2	182	18	5	20	6	22
South Gujarat	6,059	3,600	146	133	6	15	3	38
Kathiawad	9,152	6	112	65	569	70	4	22

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SUBSIDIARY TABLE III—Comparison of Caste and Language Tables

Tribe (Hindu and Animist)	Strength of tribe (Table XIII)			Number speaking tribal language (Table X)
	Total	Hindu	Animist	
1	2	3	4	5
Bavcha	1,017	1,017	....	679
Bhil	43,667	23,569	20,098	31,586 (includes speakers of Dubli, Valvi and Vasawi indicated below, and also of Khandesi who number 1,103)
Chodhra	32,841	1,315	31,526	30,656
Dhanka	7,610	6,289	1,321	..
Dhodia	21,341	1,512	19,829	19,051
Dubla	31,307	23,250	8,057	421 (included under Bhili)
Gamit	51,974	375	51,599	51,587
Kathodia	372	..	372	314
Kolgha	857	2	855	445
Kokna	6,762	893	5,869	5,770
Kotwalia (Kotalia)	1,410	30	1,380	1,449
Mavchi	479	436	43	..
Nayakda	8,672	1,269	7,403	4,557
Talavia	20,527	19,020	1,507	..
Valvi	1,473	..	1,473	1080 (included under Bhili)
Vasawa	13,610	2,237	11,373	5358 (included under Bhili)
Varli	205	..	205	351
Vanzara	490	490	....	76

Note.—Figures for Kathodi and Varli are included under other dialects, under Marathi in Imperial Table X.

SUBSIDIARY TABLE III-A.—Language Returns correlated with Caste Table

Language	Actual numbers speaking the language	Castes, tribes and races supposed to speak the language	Total of estimated speakers	Excess of actual speakers over estimated	Excess of estimated speakers over actual
Gujarati	1,867,343	Hindus (1,742,160)—excepting Deccani castes and tribes (32,660), forest tribes returned as Hindus (95,370), Hindus from United Provinces, Punjab, Rajputana and Central India (10,970) and Bhatias, Kathiawadi Khatris, Kharwas and Okha Luhanas (5,220); Indian Christians less Goanese and Feringis (7274-149 = 7125); Parsis (7,530); Hindu Aryas (645); Gujarati Musalmans (such local converts as do not speak Kachchhi and Urdu =96,581); and Jains (43,223).	1,753,044	114,299	....
Marathi with dialects ..	33,165	Deccani Hindu castes (32,660); Deccani Animist tribes (577) Goanese and Feringis (149) —	33,386	....	221
Western Hindi (Hindi, Urdu and Hindustani).	62,367	Hindustani Hindus from United Provinces, Central India etc. (6,779); Musalmans with foreign strain and local converts who are supposed to speak Urdu (56,245)	63,024	....	657
Bhil dialects (including Khandeshi and Banjari.)	145,856	Forest tribes: Animist and Hindu (163,077 + 95,370 = 258,447).	258,447	....	112,591
Kachchhi, Sindhi and Lahnda.	12,100	Kathiawadi Memons and Khojas (6,885); Kathiawadi Kharvas and Khatris, Bhatias and Okha Luhanas (5,220); Sindhis supposed to retain their own language (782).	12,887	....	787
Eranian Branch and Arabic	306	Afghans, Balochis, Makranis, Arabs	1,835	....	1,529
English	160	Europeans and Anglo-Indians	147	13	....
Remaining Languages ..	5,225	Remaining Population ..	3,752	1,473	....
Total Languages ..	2,126,522	Total Population ..	2,126,522	115,785	115,785

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CHAPTER X

INFIRMITIES

STATISTICAL DATA

Subject	TABLES		
	Imperial	State	Subsidiary
Infirmities by Age-Periods	XII-I	....	....
Infirmities by Divisions	XII-II	....	....
Infirmities by Castes, Tribes and Races..	XII-A	....	....
Number afflicted per 100,000 of the Population—Five censuses ..	....	....	I
Distribution of the Infirm by age per 10,000 of each sex	....	....	II
Number afflicted per 100,000 of each age-period with number of females afflicted per 1,000 males.	....	....	III
The Infirm by Age and Civil Condition	....	XIV	....

General Observations.

333. Definition and Statistics—The statistics regarding Infirmities are contained, as above detailed, in the two parts of Imperial Table XII, and in Imperial Table XII–A. The three subsidiary tables are prepared from Imperial Table XII. Besides these tables, a special table regarding the civil condition of the infirm has been compiled for the State.

The categories of the infirm investigated by the Census of 1921 differ only slightly from those of ten years ago. In 1911, the instructions regarding Infirmities to the Enumerators were :—

" Column 16 (Infirmities) :—If any person be blind of both eyes or insane, or suffering from corrosive leprosy, or deaf and dumb from birth, enter the name of the infirmity in this column. Do not enter those who are blind of one eye only or who are suffering from white leprosy only, or who have become deaf and dumb after birth."

The only change introduced in this census was to omit the words " from birth" and also the clause at the end of the last sentence, " or who have become deaf and dumb after birth." The intention was to include under the class of deaf and dumb, those who have acquired these infirmities after birth. It has been stated on the authority of Dr. James Kerr Love, M. D. (Glas.), that about half the number of deaf-mutes acquire their affliction after birth and *before speech is fixed.* Thus it was presumed that a great many afflicted persons of this class escaped enumeration under the old definition. It was therefore thought desirable to expand the definition so as to include the persons who have become deaf-mutes after birth.

In connection with these instructions, it must be mentioned that an important association for the relief of the Deaf and the Blind from Ahmedabad sought to press upon me the addition of a few other categories to the Census Schedule in regard to Infirmities. Along with the deaf-mutes, they wanted us also to compile figures for the "Speaking Deaf," " the Hard of Hearing " and "Those that cannot work as well as the Sighted." The " Speaking Deaf " are those presumably who acquire complete deafness after speech has been fixed. The object of including these classes was " to get a clue of these afflicted persons with a view to help them by medicine, operation or education." It was difficult however to accede to these requests, however one sympathised with the excellence of these objects. The census agency is by no means an expert agency. The enumerator is made to work gratuitously at a business which with greater use is becoming more and more distasteful to him ; and he has no wish to be bothered with the duty of compiling additional information on any matter. Further, he has little training and less time for such subtleties as the last two of the three additional infirmities which the Gujarat Association desired us to investigate. The terms are so vague besides, that

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there is no possibility of compiling any accurate statistics regarding them. The enumerator is hardly expected to stop and subject the individual concerned to a detailed eye-examination, such as was suggested in the instructions drafted by the Association :

"If the enumerator finds that some member of the family cannot see well, he will then ask whether he or she can see enough to read a book. Should it appear that the sight is so seriously impaired that it is impossible for the person to read a book or to see an object ten yards away, such a person may be noted as blind, even though as a matter of fact, he or she may have some slight power of sight."

These instructions can only be given effect to by a properly trained staff, working under the direction of the medical and sanitary departments ; and I take leave to suggest that a separate census of infirmities may be undertaken by the State through the agency of these two departments. In the meantime, it must be stated that the object of the census was merely to obtain figures regarding infirmities which are the most obvious to even an untrained eye. That is why, in addition to the above-mentioned intermediate categories regarding blindness and deafness, the Census also chose to ignore these numerous gradations between cretinism or weakness of intellect and complete insanity, and between corrosive leprosy and the incipient stage of it which are far more common and more difficult to detect.

334. Accuracy of the Return—One other reason for rejecting the proposals of the Gujarat Association was the belief strengthened by the testimony of successive censuses that enumerators were sometimes prone to enter persons particularly at the extremes of life as "blind" and "deaf-mute," even though they are not totally so. Such wrong entries as *ardh-pagal* (half-witted), *behero* (deaf), *bobdo* (mute), *rat-andhalo* (night blind), *apang* (lame), *kodhio* (white leprosy) etc., however, continued in this census also as in previous censuses. These were however eliminated in the process of tabulation. Particular emphasis was also laid in the course of the training of the census staff on the importance of correct entries in regard to infirmities. The object in view was carefully explained. As the census staff mostly consisted of local men there was little chance of any wilful concealment happening, except in the large towns. The work was also carefully tested and supervised by the inspecting staff.

The tabulation was most scrupulously scrutinised. The infirmities were separately extracted from the schedules on slips by a special staff ; then Principal Nandurbarkar of the local school for the Deaf-Mutes and the Blind, assisted by his staff, went over the schedules again and carefully scrutinised the tables. The figures regarding the blind and the deaf-mute were critically examined by him by reference to his own notes and personal experience and pronounced fairly correct. Every facility was afforded to him to make such extracts from the schedules as were necessary for his educational purposes. These figures were finally scrutinised by a special staff of picked compilers, who worked under the supervision of my Assistant. There is little doubt that the compilation of the Table has been very accurately accomplished. The progressive increase in the number of infirmities since 1901 may be ascribed, in part, to the great accuracy of record and compilation. It may also point to the inclusion of weak-minded persons as insane, and the hard of hearing and the dim-sighted as deaf-mute and blind, through the over-zeal of the census staff.

335. General review of the results—The total number of infirm persons at each of the censuses since 1881 is noted in the margin. The total number of afflicted persons in 1921 was 8,901 or 417 per 100,000 of the population. In 1911 the afflicted total was 4,748, or 234 per 100,000. The respective proportions for 1901, 1891 and 1881 were 145, 292 and 448 per 100,000. The figures for 1881 are admittedly defective and erred here as in other parts of India generally on the side of excess. In 1891, an improvement in diagnosis led to the elimination of many entries from the table. In 1901, the famine destroyed or

Number of persons afflicted with	1921	1911	1901	1891	1881
Insanity	994	523	232	845	932
Deaf-Mutism ..	598	425	674	918	1,714
Total Blindness ..	6,794	3,361	1,649	4,751	6,501
Corrosive Leprosy ..	552	445	277	569	624

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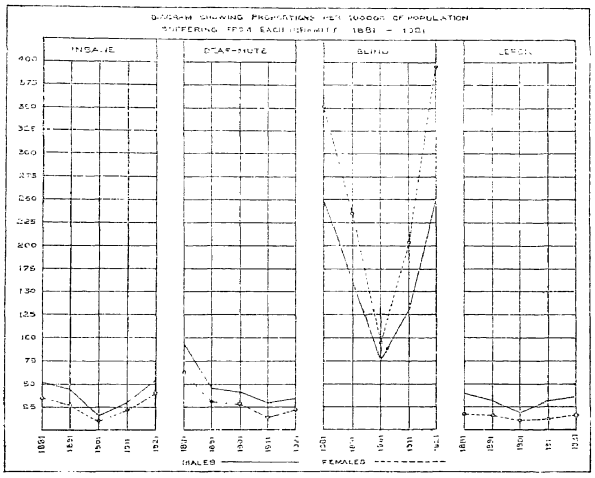
drove away many of the infirm from our territories. Since then there has been a progressive increase in the proportional as well as in the absolute figures. A combination of factors including improvement in record and tabulation and change in definition, as well as high mortality, famines and economic depression of the last twenty years must have contributed generally to the continued increase in these figures of misfortune.

The marginal diagram illustrates the proportional variation in each infirmity by sex since 1881. This diagram is of great interest as it allows comparative examination of the prevalence of the four recorded infirmities jointly in the last forty years. In regard to deaf-mutism there is a marked decline from 93 male, and 62 female, deaf-mutes, (per 100,000 of each sex) in 1881, to 34 and 22 in 1921. The blind curve shows a steep rise since 1901. In the last twenty years, the proportional figures of the blind have more than trebled in the case of males and have more than quadrupled in the case of females. In regard to leprosy and insanity, the figures show slight variation since 1881. Except deaf-mutism, all classes of infirmities showed a big drop in 1901. The proportions of the females show nearly the same variations as in regard to the males, and except amongst the blind, they keep at a lower level than the male curve. Under each infirmity, we shall attempt to analyse and isolate the factors that have contributed to these variations.



336. Co-existent Infirmities—But in the meanwhile it is interesting to note the phenomenon of co-existent infirmities. In 1911, the crude total of the figures under each infirmity exceeded the total of persons afflicted by 6, because there were two who were both insane and deaf-mute, two who were deaf-mute and blind, and two others who were both leprous and deaf-mute. In 1921, these cases of cumulative misfortunes are more numerous. 29 persons were returned as afflicted with double infirmities, and four with triple. 14 of these persons are both insane and deaf-mute. 8 others are both insane and blind ; 3 are both blind and leper, 4 both blind and deaf-mute; while 4 persons suffer from a triple misfortune-insanity, deaf-mutism and blindness. The connection between insanity, or at least cretinism, and deaf-mutism is well known ; and perhaps the number of these cases of co-existent infirmities would have been larger if the enumerator had cared to make a complete record and did not write down, as possibly it was the case, the infirmity that seemed to him the more important or significant. Oral instructions emphasized the necessity of a full record of these combined infirmities. Perhaps the increase in the number of these cases since 1911 is evidence of improvement in the census record of infirmities.

337. Order of prevalence of Infirmities by Caste and Race—While we are on the general subject of infirmities, it is useful to examine the order of prevalence of these infirmities in representative castes and communities. The table in the margin shows how insanity is most prevalent amongst the higher and more economically provident classes on whom the strain of living makes a greater mental impression than on the lower orders. Communities asso-

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Caste or Community	Order of prevalence of			
	Insanity	Deaf-Mutism	Blindness	Leprosy
Parsi	1	1	13	..
Hindu—				
Brahman	2	12	2	11
Kanbi	10	13	10	10
Maratha	5	2	8	9
Koli	13	11	11	8
Rabari	14	7	3	12
Dhed	8	14	1	7
Hindu and Jain Vania	4	6	5	13
Musalman	3	10	7	10
Christian	6	8	6	..
Forest tribes—				
Bhil	7	3	4	1
Vasawa	9	5	14	3
Chodhra	15	15	16	5
Nayakda	11	16	9	4
Dubla	16	4	12	2
Gamit	12	9	15	6

ciated with agriculture and rural living seem to be least affected by it. On the whole there seems to be some correspondence between insanity and deaf-mutism although locality as well as social practices may have a disturbing effect on the correlation. Blindness is a good deal dependent on habits of living, standards of house-room, occupation and economic condition generally. Leprosy seems to prevail where insanity is the least evident, and particularly amongst forest tribes. Generally it may be said that locality as well as climatic conditions have as much determining effect as social customs such as inter-breeding, habits of living, house-room, occupation, and even race, in the prevalence of infirmities.

Insanity.

338. Main Figures—The number of persons afflicted with insanity returned in the recent census was 994 (595 males and 399 females). There are thus 47 insane persons per 100,000 of the population, as against 26 persons per 100,000 in 1911. The marginal table gives the main comparative figures of the prevalence of insanity since 1891. The numbers dropped in 1901, but since then they have progressively increased, and now there are 11 more male, and 12 more female, lunatics, per 100,000 of each sex, than thirty years ago. The definition requires that only completely insane persons should be returned and not cretins, idiots and other feeble-minded persons whose affliction is not so disastrous as to incapacitate them totally from the ranks of workers. Errors of diagnosis must have therefore occurred in all censuses, but the extent of their operation in influencing the figures since 1891 cannot be estimated, nor is it possible to state how far the variations in the number of insane persons are vitiated by the factor of wilful omissions and how far the progressive improvement in the machinery of record and tabulation has effected the elimination of wrong entries. The sudden drop in 1901 must however be wholly attributed to the famine. The infirm are not long-lived, and the disaster of 1899-1900 must have destroyed a good many of their number. Many of the insane must have also succumbed to the strain. Since that year, as has been already explained in Chapter I, the economic conditions that have supervened have borne hardly on the people. The last decade was really worse than the one previous. Taking only the higher castes, the number of the insane has increased largely amongst commercial and professional classes particularly amongst communities which are mostly dependent on fixed incomes. Insanity has increased amongst these communities, even where their total strength has declined. This is so in regard to Parsis, Nagar and Audich Brahmans, and Maratha Kshatriyas.

Year	Insane			
	Actual figures		Proportion per 100,000	
	Male	Female	Male	Female
1891 ..	535	310	43	27
1901 ..	151	81	15	9
1911 ..	319	204	30	21
1921 ..	595	399	54	39

Name of Caste or Community	Number of Persons Insane in	
	1921	1911
Parsi	9	7
Nagar Brahman ..	13	7
Lad Vania	10	..
Audich Brahman ..	27	17
Vohora	22	6
Saiyad	8	2
Memon	9	8
Maratha Kshatriya	8	6
Kanbi	159	73

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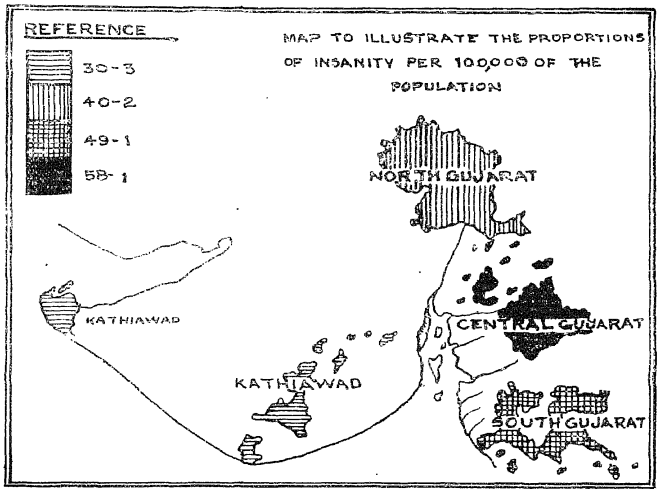
339. Distribution by Sex and Locality—The map given in the margin shows the local distribution of the insane. A table is also given which shows the proportional figures by sex in the different Natural Divisions. The highest prevalence of insanity is in Central Gujarat. South Gujarat, North Gujarat and Kathiawad then follow in order. The last named division shows the least prevalence of this disorder amongst females. The sex ratio varies in the different divisions, but generally there are 67 females afflicted to 100 males amongst the total insane population. In Kathiawad, apparently the figures are not very reliable, at least in regard to the female insane. Usually it is the case that the difference between the sexes is the least where the women come out and join the men freely in outdoor occupations like agricultural labour. From this point of view, in South Gujarat, where both males and females amongst the aboriginal population take an equal share in the struggle for existence, the sexes approach equality both in number of lunatics as well as in their proportion to the total population. The influence of the *Purdah* in determining sex ratios of the insane will be referred to later.

Division	Proportion of Insane per 100,000 of each sex	
	Male	Female
Central Gujarat* ..	63	46
North Gujarat ..	47	33
South Gujarat ..	51	47
Kathiawad	41	19

* The figures are prepared after allowing for the effect on the distribution of the location of the Lunatic Asylum in Baroda City.



I do not think locality has any appreciable influence in the distribution of the insane. In the Indian Census of 1901, the general conclusion was arrived at that local physical conditions had little effect on insanity and further that figures lent little support to the theory that such social practices as consanguineous marriages had any effect. On the other hand, the prevalence of insanity has a great correspondence with literacy. In the margin a comparative table is given which shows that generally wherever education has been most wide spread there the proportion of insane persons is high. Kathiawad is an exception, where the factor of literacy is counterbalanced by that of occupation. Urban occupations presumably involving greater mental strain tend to produce insanity more than other occupations. In this respect it is fortunate that Kathiawad has little of industry or commerce that would induce its inhabitants to start in mad pursuit of wealth. Trans-Sabarmati Area is another notable

Natural Areas	Proportion of Insane per 100000	Order according to prevalence of insanity	Order according to literacy
City *	116	1	1
Rasti	66	2	2
Charotar	54	3	3
Kahnam	54	3	6
Kathiawad Scattered areas.	52	4	5
Trans-Sabarmati ..	52	4	11
Chorashi	45	5	11
Vakal	43	6	8
East Kadi	41	7	9
Semi-Rasti	40	8	10
West Kadi	35	9	11
Rani	28	10	12
Kathiawad Middle-block	27	11	4
Kathiawad Coast ..	27	11	7

* For the City, the corrected ratio is given after deducting from the Asylum population, those whose birth places are outside the City.

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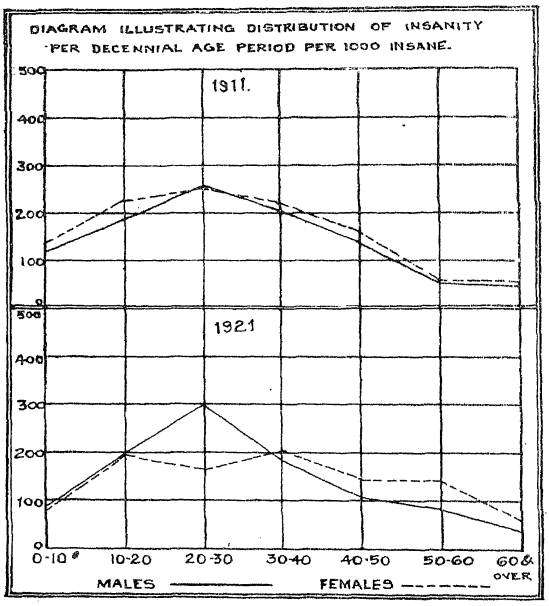
exception. It is an unhealthy region, and perhaps its fever prevalence, as will be pointed out presently, is a pre-disposing cause. Chorashi is a third exception. Presumably, the social habits of the Rajput, Koli and Animist populations who are addicted to opium, *ganja* and drink are responsible for the comparatively high ratio of insanity in this tract.

340. Insanity by Age—The proportion of the insane per each age-period is shewn in Subsidiary Table III. That table shows that the danger zone for the onset of insanity amongst males is the age-period 15-60, the highest point being reached in the ages 25 to 30, when naturally man's needs are keenest and his earning power to meet these is not yet adequate. Amongst women the critical ages for insanity apparently are 15-20, and 30-45,—the earlier period because of the premature burden of motherhood and the later when the cares of the family have exerted their severest strain. It is also a well-known physiological fact that the period immediately preceding the menopause is a time of great mental stress for the female. It is remarkable that this danger zone persists in the proportional figures of three censuses since 1901.

The figures respecting distribution of infirmities by age (Subsidiary Table II) also support this phenomenon. A diagram is given in the margin which gives comparative curves for two censuses showing the distribution of 1,000 insane per each decennial age-period. Here also the summit of the male curve is at 20-30, while amongst the females there are two summits, one at 10-20 and another at 30-40. In 1911, it is true the summit was at 20-30, but the proportional figures for the female insane indicate that in that year, the age period 15-20 and 30-35 had the highest ratios.



341. Figures of Age as a test of Accuracy of record—The figures by age can also be used to test the accuracy of record. In the Indian census, it is required as pointed out already to distinguish between the violent form of mental derangement which is insanity from idiocy, cretinism, weakmindedness and other less complete forms of mental disorder. Even in England it is difficult to make this distinction. In India, the difficulties must be insufferable. One test about insanity is to see whether the returns include a large number of the congenitally weakminded persons or not. Complete insanity is a phenomenon which appears only in the adolescent or adult periods of life. If there is a decrease in the number of the so called "insane" in the age-period 0-10 it will indicate a comparatively greater accuracy in the record. In this respect, the figures of 1911 are better than those of this census. In 1911, there were 12 persons returned as insane per 100,000 of the age-period 0-10, while in 1921, the corresponding proportionate figure was 15. Some error of diagnosis must have crept in, and a greater number of the congenitally weakminded must have got included in the returns. There is another source of error which must be mentioned. In the hyper-endemic malarial

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areas, occasionally the delirium due to fever is mistaken for insanity. But on the other hand malaria with its insidious effects on the constitution is also a predisposing cause of mental derangement. The tracts most exposed to malaria are the Songadh, Dhari and Khambha talukas and the Trans-Sabarmati Area. In these regions, the prevalence of insanity is indicated by the ratio of 38 per 100,000. Trans-Sabarmati has, as we have already seen, a high ratio of 52 insanes per 100,000. All these areas are chiefly inhabited by a low-type population whose mental equipment ordinarily has little fear of derangement. The unhealthiness of climate combined with the inclement conditions of their living must account for the comparatively large proportion of their insane.

342. **Some considerations on the Variation since 1911**—Much has been already stated above to show how far the figures disclosed in 1921 indicate a real increase in insanity. A certain proportion—not large—of the increase is due to the inclusion through error of diagnosis of congenital cretins at the age-period 0-10 in this census. On the other hand the factor of wilful concealment (which is presumably mostly confined to women) seems to be somewhat less operative now than formerly. The female lunatics have increased from 204 to 399, and the increase is mostly found in the higher age-periods, particularly in the marriageable and child-bearing ages, when wilful concealment through obvious reasons is most likely. In the higher ages, 20 and upwards, as the marginal comparison shows, there seems to have been a real increase in the number of the insane. Already in para. 338 it has been shewn that in certain higher castes, the figures show large increases since 1911.

Age-Period	Number of insane in	
	1921	1911
20—30 ..	244	132
30—40 ..	191	110
40—50 ..	120	57
50—60 ..	107	29
60— ..	48	26

343. **Insanity by Caste and Community**—The figures regarding the prevalence of insanity amongst the different castes and communities in the State are contained in Imperial Table XII-A. In the margin a table is given showing the proportional figures of the insane amongst representative groups. By religion, the highest proportion is claimed by the Parsis. The figures for the last three censuses show that this community has taken the lead in this respect. Amongst Hindus, Ghanchis and Golas just as Brahmans and Vanias show high ratios. Amongst Musalmans, the intellectual and commercial classes show the highest ratios. It must be here also mentioned that insanity amongst Musalman females is more prevalent than amongst women of other communities. There are 75 females insane to 100 males so afflicted amongst Musalmans, while the general sex ratio for the State is only 67. If we take into account the factor of wilful concealment, which is most effectively operative owing to the *purdah* amongst these Musalman females, the proportion of insanity will be found to be even higher than the figures show. One would be inclined to put this phenomenon to the rigours of the Musalman *zenana*. Amongst the Marathas, there are more females than males in their insane total. On the other hand the comparative freedom of the women of other communities exposes them to the perils and mischances of life almost as much as their men-folk, and the sex ratio amongst Brahmans, Vanias and Parsis is by no means favourable to females.

Caste or Community	Proportion of Insane per 100,000 of each caste.
General Population ..	*47*
Hindu	*45*
Selected Brahmans ..	86
Sonars, Sutars, Bhavsars	76
Kanbis	37
Maratha Kshatriya ..	60
Golas	88
Hindu and Jain Vania	74
Ghanchis	106
Dhed	48
Koli	33
Rabari	30
Parsi	*120*
Musalman	*75*
Vohora	83
Memon	64
Saiyad	90
Christians	*54*
Forest tribes	
Bhil Hindu and Animist	50
Dubla ,, ,, ..	13
Nayakda ,, ,, ..	35
Vasava ,, ,, ..	44
Chodhra ,, ,, ..	16
Gamit ,, ,, ..	33
Religious Mendicants— (Hindu and Musalman)	96

The table given above points to certain broad conclusions. Insanity is a disease associated with the socially higher and economically more provident classes.

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The lower castes which show high ratios in Insanity are either those which are addicted to drink like Dheds and Golas, or others whose constitution has been wrecked by long residence in fever-haunted tracts, like sections of the Forest Tribes. Amongst these latter, drink is also a contributory factor. Occupation seems to exert an undoubted, if secondary influence. Agriculture and pasturage seem to have a salutary influence; while religious mendicancy (amongst Bavas and Fakirs) no doubt attracts the insane. The typically urban occupations with their hard conditions of toil have a deleterious effect as seen in the high ratios amongst Sutars, Bhavsars, Sonis, and Ghanchis. Social practices like consanguineous marriages although they may result in feeble mindedness and cretinism do not appear to lead to the more violent forms of mental derangement. Diet has also little to do with the question. Hindu Brahmans and Vanias who live abstemiously and on vegetable diet suffer equally with Parsis and Musalmans, while Kolis and Marathas whose diet consists of animal food suffer less than either.

Deaf-Mutism

344. Main figures—The number of deaf-mutes in the State is 598 (369 males and 229 females). The ratio per 100,000 of the population is thus 28, or taking the sexes separately, 34 for males and 22 for females. The marginal table gives comparative figures (both absolute and proportional) for deaf-mutes in the different censuses from 1891. It must be remembered however that the deaf-mutes of 1921 include also those who have acquired deaf-mutism after birth. The previous figures profess only to be concerned with congenital deaf-mutism: that the figures show a decline as compared with 1891, proves that in the earlier censuses many deaf-mutes after birth were wrongly included in the returns. It is a notorious fact that deaf-mutes are short lived, and therefore the proportion of deaf-mutes to total population by age periods should show a diminishing series. The proportional figures for 1901* and 1891 do not show this at all. In the margin a table is given which shows the comparative ratios for four censuses from 30 years of age and upwards. It will be seen that 1921 shows the smoothest series of the four censal years. The only disturbance is about the years 55-60, when it is well known that the age-returns are most defective and there is usually a heaping there so that even persons of lower ages are returned at 50, 55 or 60. On the whole, the deaf-mute return of 1921 may be claimed to be fairly accurate and more so than its predecessors. As to the return of 1911, it was stated in the report of that year that in the course of tabulation "persons shewn as dumb were assumed to be congenital deaf-mutes." This proceeding was justified with a view to set off against the number of genuine deaf-mutes omitted. If we assume that the margin of omission is about the same in the two censuses, the addition due to the above cause to the true figure in 1911 will have to be deducted while the true variation is considered.

Year	Deaf-mutes			
	Actual figures		Proportion per 100,000	
	Male	Female	Male	Female
1891 ..	568	350	45	39
1901 ..	412	262	41	28
1911 ..	302	123	29	13
1921 ..	369	229	34	22

Age-Period	Proportion of male deaf-mutes per 100,000			
	1891	1901	1911	1921
30—35 ..	45	37	22	26
35—40 ..		35	20	25
40—45 ..	58	78	19	22
45—50 ..		26	28	21
50—55 ..	55	64	11	23
55—60 ..		59	27	26
60— ..	99	81	27	10

* Mr. Dalal in his Report (p. 407) of 1901 confessed that "on looking at the figures generally, there was a strong suspicion that the enumerators had put in those who merely suffered from dumbness or deafness or both after birth."

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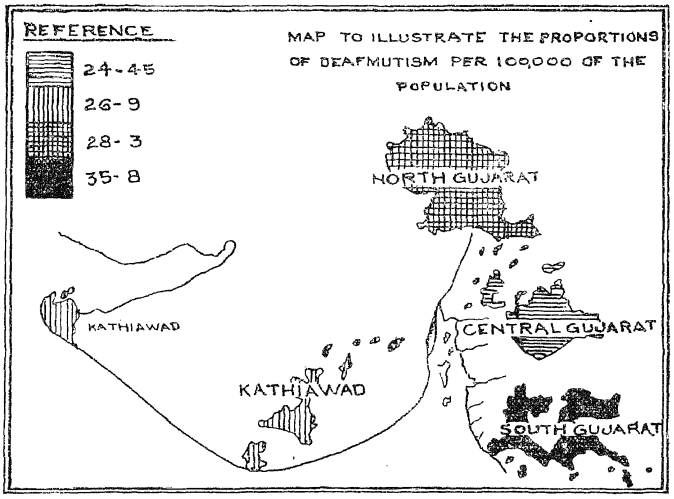
345. Some considerations on Variations since 1911—The figures of deaf-mutes have increased from 425 to 598 in the last ten years. If we estimate the true figure for 1911 to be 400, the increase is about 209 or 50 per cent. in the decade. The change of definition above referred to must have accounted for the increase to a great exent. In para. 333 the opinion of Dr. James Love has been already alluded to. If acquirement of the defect of deafness before speech is fixed, be a potent contributory factor to the spread of deaf-mutism, then the variation in the deaf-mute figures in age-periods 0-10 and 10-15 will show how far the change in definition has contributed to the increase. In 1911, the deaf-mutes aged 0-15 numbered 166 only. This number has now increased to 264. Nearly half of the total increase in deaf-mutes has occurred therefore in these early ages, which can be safely credited to this change in definition.

346. Distribution by Locality—The map and the table given in the margin show the local distribution of the deaf-mutes. South Gujarat has the largest proportion of deaf-mutes, namely, 36 per 100,000. North Gujarat follows with 28 persons, Central with 27, and Kathiawad with 24 deaf-mutes per 100,000 of the respective populations of these divisions. Compared with the ratios for 1911, South Gujarat shows decrease. But the other three divisions particularly Kathiawad show increases. The absolute figures themselves are however so small that the variations do not call for much remark.

Division	Proportion of deaf-mutes per 100,000	
	Male	Female
Central Gujarat ..	31	18
North Gujarat ..	35	21
South Gujarat ..	39	32
Kathiawad	27	27



347. Distribution by Sex and Age—The distribution by sex shows that in this infirmity as in insanity, women suffer much less than males. In India in 1911, there were 677 female deaf-mutes to a thousand males afflicted with the same infirmity. In this State, the sex ratio is a little more favourable to the females. Subsidiary Table III shows that the number of female deaf-mutes

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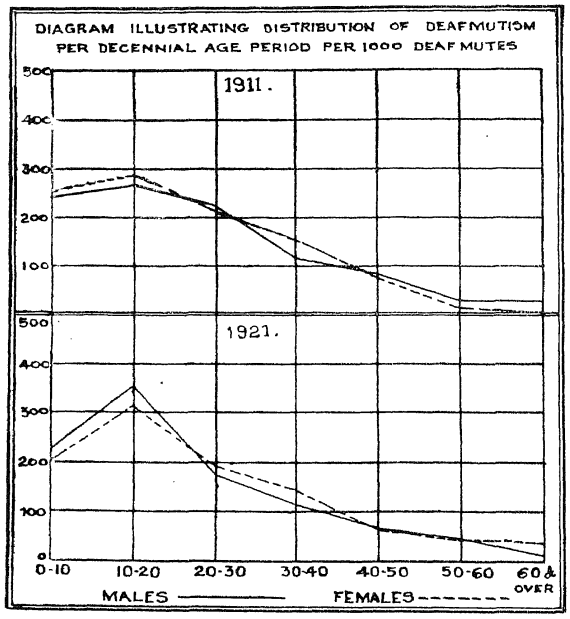
to 1000 male is 621. The diagram in the margin shows the distribution by age-periods of the deaf-mutes in the last two censuses. The largest number of deaf-mutes are aged 10-20, after which period the curve descends regularly towards the end of life. As the present census is not restricted to congenital deaf-mutes, there is a steeper rise from 0-10 to 10-20 in 1921 than in 1911. But the reason why the proportion of deaf-mutes at the first decennial age group is lower than at the next is generally explained to quote from the India Census Report of 1911—by the fact that "parents are reluctant to admit the existence of this defect in their children so long as there is the slightest hope that it is merely a case of retarded development."



348. Connection between Insanity and Deaf-mutism—In the introductory section of this chapter (*vide* para. 337) an attempt was made to deduce from comparison of the order of prevalence of the different infirmities amongst representative social groups that Insanity and Deaf-mutism were pretty closely associated. It is well known in Europe and the United States of America that deaf-mutism co-exists with cretinism and goitre. Mr. (now Sir Edward) Gait established the association between these three infirmities. He also showed that the water supply of certain rivers was the medium of the pathogenic organism. While discussing the co-existence of infirmities, we pointed out that there were 14 cases of combined insanity and deaf-mutism. It was also pointed out that if the enumerators did their duty properly they would have shewn many more combined entries of this description than they have done. As it is, it is difficult however to establish the connection from the deaf-mute returns of this State. Deaf-mutism is not nearly so prevalent as in other parts of India. In India, in 1911, the male deaf-mutes numbered 74 per 100,000 against only 29 in this State. The prevalence of deaf-mutism in the different natural areas is shewn in the marginal table, and the order of such prevalence is compared to the order according to insanity. Here locality on the one hand as social environment and occupation on the other are disturbing factors. In Charotar, Vakal, Kahnam and Chorashi for instance, it is social habits, the economic environments, and the general mental equipment of the inhabitants that prevent the ratios of insanity and deaf-mutism from corresponding. In Semi-Rasti, on the other hand it is local physical conditions that are the disturbing factor. Apart from these circumstances, there seems to be a fair correspondence between the two infirmities. From this table it appears that the hilly and forested regions suffer more from deaf-mutism than the open low lands, and that tracts in the neighbourhood of the sea where the

Natural Area	Proportion of deaf-mutes per 100,000	Order according to deaf-mutism	Order according to insanity
Charotar	24	8	2
Vakal	22	9	5
Kahnam	28	6	2
Chorashi	20	10	4
East Kadi	33	5	6
West Kadi	18	11	8
Trans-Sabarmati ..	34	4	3
Rasti	37	3	1
Semi-Rasti	45	1	7
Rani	27	7	11
Kathiawad Middle Block	24	8	10
Kathiawad Scattered Area	39	2	3
Coast Area	27	7	10

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soil is of recent formation from alluvial deposits have higher ratios than areas remoter from the coast. Again unhealthy areas with wet humid climates show more evidence of this infirmity than elsewhere. Finally the reader must be cautioned that the rather high ratio that appears against East Kadi is due to the situation of the Deaf and Dumb School at Mehsana town.

An attempt has also been made from a collation of taluka figures to see whether the neighbourhood of certain rivers had any influence in the causation of these infirmities generally and of deaf-mutism in particular. The marginally noted talukas have the highest proportions of deaf-mutism in the State. Khambha is, as we may recall, all forests and hills, and from an examination of the entries of deaf-mutes, it appears that villages where they occur are all situated on the upper reaches of the Dedumehr and Malan rivers. Similarly, the greater number of deaf-mutes found in Kamrej taluka live in villages like Netrang, Machchhi, Vihan and Shampura on the banks of the Tapti river. In Mahuva taluka, the deaf-mutes are found mostly in Kurel, Sevasan, Fulwadi, Dedvasan, Anaval and Rupvel. These are either situated on or near the banks of the Purna and Kaveri rivers. As regards Harij, the only peculiarity of the figure is that all the deaf-mutes occur in the vicinity of the Rann of Cutch. I have not been able to find out whether goitre is in special evidence in these parts. The local officers both revenue and medical are unable to enlighten me on this point, and I can find no information regarding it in any of the published reports of the Medical Department, but at any rate, the connection of certain rivers with deaf-mutism seems to be indicated by the results of the present census.

Proportion of deaf-muters per 100,000 in areas of greatest prevalence	
Taluka	
Khambha (Kathiawad Middle Block)	59
Harij (West Kadi) ..	57
Kamrej (Rasti)	52
Mahuwa (Semi Rasti) ..	52

349. Prevalence of Deaf-mutism by Caste or Community—In the margin a table is appended similar to that given for Insanity showing the relative prevalence of deaf-mutism in the different strata of society. The high proportion of the deaf and dumb amongst Marathas is only due to the presence of Maratha children in the Deaf and Dumb School in the City. The proportion of Dubla deaf-mutes (which is only 46 per 100,000 in this census) may be compared to that in 1911, when if the figures are to be believed, the ratio was as high as 735 per 100,000. I am under the impression that there was a mistake in this as well as in other infirmities in the compilation of figures in Imperial Table XII-A of that year. I believe that the figures regarding infirmities related to both the Hindu and Animist sections of the tribes, while the total population shewn in columns 2-4 was of the Animist section only. Thus the proportions were unduly inflated. Apart from these reservations there is little from these figures to show that race, social practice or occupation had a hand in influencing the causation of deaf-mutism. Cousin marriage and consequent excessive interbreeding may have had the effect of promoting deaf-mutism amongst Parsis and Saiyads. But beyond that, there is nothing to show that this infirmity has a special predilection for any particular section of the people. Animists (forest tribes) as in other infirmities show fairly high ratios in this particular misfortune also. But that is due generally to their poverty, and extremely low and dirty standards of living. The local distribution of castes may also be a reason. Association with localities where conditions exist which favour the incidence of deaf-mutism, is enough explanation why a particular community suffers from this affliction relatively more than others. This applies to the Parsis and Forest tribes as well, who stay largely in Rasti, and Semi-Rasti tracts of Navsari Division.

Caste or Community	Proportion of Deaf-mutes per 100,000 of each caste
General Population ..	28
Hindu	28
Selected Brahmans ..	24
Sonars, Sutars, Bhavsars	34
Kanbis	22
Marathas	60
Golas	18
Hindu and Jain Vanias	35
Ghanchis	32
Dhed	20
Koli	24
Rabaris	30
Parsi	66
Musalman	25
Vohora	15
Memon	14
Saiyad	56
Christian	27
Forest tribes (Hindu and Animist)	
Bhil	46
Dubla	45
Nayakda	12
Vasava	37
Chodhra	19
Gamit	25
Religious Mendicants ..	29

Blindness

350. Main Results—There were 6,794 persons returned as blind in the recent census. This gives a ratio of 319 blind per 100,000 of the population, as

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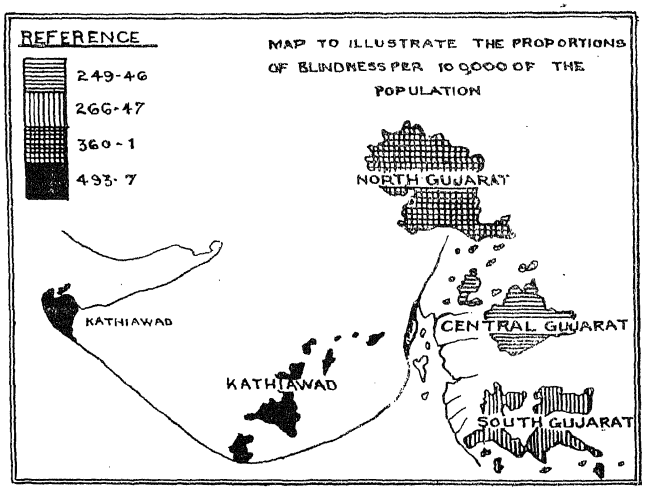
against 166 per 100,000 in 1911. The marginal table gives comparative figures (both absolute and proportional) for the last four censuses. Compared to 1891 there are now 88 additional males and 160 more females, who are blind, per 100,000 of each sex. As in other parts of India, blindness showed a significant decline in 1901. There was an increase in 1911, which Rao Bahadur Govindbhai ascribed to better enumeration and improvement in tabulation. In the recent census, this infirmity shows a sharp rise both in figures and in proportion to the total population.

Year	Blind			
	Actual figures		Proportion per 100,000	
	Male	Female	Male	Female
1891 ..	2,017	2,734	161	235
1901 ..	755	894	75	95
1911 ..	1,363	1,998	129	204
1921 ..	2,742	4,052	249	395

351. Local Distribution of the Blind—The accompanying table and map give the requisite proportional figures per Natural Division. Against a general average of 319 for the State, Kathiawad has a high ratio of 494 per 100,000 who are blind. North Gujarat follows with 360 blind persons per 100,000. The proportions for the Southern and Central Divisions are 266 and 249 respectively.

Division	Proportion of Blind per 100,000 of each sex	
	Male	Female
Central Gujarat ..	195	311
North Gujarat ..	285	438
South Gujarat ..	215	318
Kathiawad	351	647



When we analyse the figures in detail by natural areas within the divisions, we realise that the prevalence of this infirmity varies inversely with the rainfall. A marginal table is given which compares the order of the natural areas according to lack of blindness and to normal rainfall. There is an almost exact correspondence. The only exception is the Rasti area, peopled by Dublas and Talavias who have high ratios of the blind, and also Kolis, whose occupation connected with the manufacture of salt affects their eyes injuriously. The Anavala Brahmans who mostly reside in this region, have a high incidence of blindness to the extent of 356 per 100 mille. Perhaps the comparatively high proportion in Rasti, as well as in certain other areas like Charotar, East

Natural Area	Proportion of blind to 100,000	Order according to	
		Lack of blindness	Normal rainfall
Charotar	308	6	7
Vakal	271	5	6
Kahnam	269	4	4
Chorashi	169	2	5
East Kadi	350	8	10
West Kadi	401	10	9
Trans-Sabarmati	309	7	8
Rasti	367	9	2
Semi-Rasti	224	3	3
Rani	135	1	1
Kathiawad Middle-Block	513	12	11
Kathiawad scattered areas	519	13	12
Kathiawad Coast area ..	455	11	13

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Kadi, Kahnam, Kathiawad Middle Block, etc., is also due to accurate enumeration and more watchful supervision.

352. Connection with small-pox—The factor of small-pox cannot altogether be eliminated from the question of blindness although it exerts only a secondary influence. In the margin are given proportional figures (calculated on the population of 1911) of deaths from small-pox in the last decade. Kathiawad suffered most from small-pox and as we have seen the incidence of blindness is there the largest. The figures for small-pox were low in Central Gujarat because of the greater spread of vaccination. In North Gujarat, the greater rainlessness and the consequent glare and the dust are more active causes in the spread of this infirmity. South Gujarat is liable to epidemics of small-pox—one such occurring in 1916. This disease must be held to some degree responsible for the high ratio of blindness in the Rasti tract.

Natural Division	Proportion of deaths from small-pox in 1911-1920 to 10,000 of population of 1911
Central Division ..	45
Northern Division ..	45
Southern Division ..	48
Kathiawad Division	106

353. Accuracy of the Return—It has been usually supposed that blindness is the most easy to diagnose of all the infirmities. Unlike the other infirmities blindness is associated with the later periods of life, so that people do not feel ashamed about owning up to it; there is therefore no incentive to wilful concealment. In Gujarati, there is a well-known term used unambiguously for the loss of one eye only. "Andhalo" however is used sometimes as a synonym for dim-sightedness, but usually it is applied to total blindness ; there is therefore the possibility of dim-sighted persons, old in years, being included in the returns. The chances of error therefore lie in the direction of excess more than of underestimating the total strength of this infirmity.

The Blind Relief Association of Bombay however sent an important Memorial before the recent census to the Census Commissioner convicting the figures of 1911 of omissions in record. They supported this statement by detailing the results of their own independent investigations in certain parts of the Bombay Districts of Nasik and Bijapur. These investigations were carried out sometime in 1919 presumably. According to their enquiries the incidence of blindness in the two sampled areas (calculated on the population of 1911) came to 438 and 260 per 100,000; the recent census figures to hand show that in Nasik and Bijapur districts, the present incidence of this infirmity is represented by the figures 251 and 170 respectively. If the samples taken by the Association were fairly representative of their districts, then even the recent census figures are only 60 and 70 per cent. of the truth. Nasik is in the neighbourhood of our South Gujarat Division, which has as we know an incidence of 266 per 100,000. Our figures of the blind had the advantage of being thoroughly scrutinised by the Principal of the local school for these defectives, and they were pronounced fairly accurate. Opinions were also invited from all the local medical officers of the State, and the majority were inclined to the opinion that the bulk of the increase since 1911 should be put down to greater accuracy in enumeration.

354. Increase since 1911 due chiefly to more accurate record—The number of blind persons has risen from 3,361 in 1911 to 6,794 in this census. The present figures are a little more than double. The female blind, as well as the male, have doubled themselves in the last ten years. As the margin shows the greater portion of the increase has happened in the ages 50 and over. As pointed out already, the main reason for the increase must be sought in improved enumeration. The instructions were very strict regarding the exclusion of the dim-sighted from the returns. Besides, the economic strain of the last half of the decade was very severe, and it was expected that this circumstance would have tended rather to a decrease in the figures of the blind as well as of the other infirm (except the insane) by killing them off in large numbers. Instead, it will be seen from a comparison of the decennial age-figures from 30 and upwards that there is a large increase. Inspite of the fact that blindness is a senile infirmity, there is no reason why figures should mount up so suddenly after the fiftieth year is reached.

Census	Under 50 years		50 years and over	
	Male	Female	Male	Female
1921 ..	1,231	1,474	1,511	2,578
1911 ..	799	1,020	564	978
Variation ..	+432	+454	+947	+1,600

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Age period	Blind proportioned per 100,000	
	1911	1921
30—40 ..	123	195
40—50 ..	222	351
50—60 ..	429	868
60—70 ..	991	2,073

Again the blind aged 50-60 in 1911 were only 429 to 100 mille; their survivors ten years later (together with people who acquired this defect in the decade) should not have so suddenly risen, if the previous figures were correct, to 2,073 in 1921. Similarly the blind aged 40-50 were only 222 to 100,000 in 1911. This figure is quadrupled in the next decennial age-group in the census of 1921.

355. Other causes of the Variation.—These discrepancies can only be explained by better enumeration. There must have been a real increase also, which is generally attributed by the local officers to economic depression and the high prices of food and other necessaries which have compelled the majority of the people to lead lives of inadequate nourishment. Dr. Talati, the Sanitary Commissioner of the State, favoured me with a long note on this and other points. Apart from better enumeration which he thought was in a great measure due to the more willing co-operation of the people as a result of the lessons learnt from the last influenza epidemic, Dr.Talati thought the lowered vitality of the people due to plague and influenza, and the general economic strain of high prices and the diminution of real wages was one of the causes of the variation in the figures of the blind. According to that same authority, at least 25 per cent. of blindness was due to *Opthalmia neo natorum*, which itself is largely the result of social diseases like gonorrhœa and syphilis. Another doctor quoted the authority of Lt.-Col. A. Street, F.R.C.S., I.M.S., for the statement that half the number of blind people was due to gonorrhœa. In this connection, it is important to note that venereal complaints, as will appear from the marginal table, are now featuring more largely than before in the hospital statistics. Two other doctors agree in thinking that eruptive fevers like small-pox are the "one essential direct cause of total blindness." In this respect, it is significant that the registered deaths from small-pox have increased from 6,287 in 1901-1911 to 10,313 in 1911-20. This cause was therefore increasingly operative in forcing up the figures of the blind in the last decade. As to *opthalmia neo natorum* the bulk of it is caused (even where there is no venereal taint) by inefficient management of labour cases by untrained *dais*. I am afraid there is little evidence of any improvement in this respect, for the figures show that in the age-period 0-10, there are 77 blind children to 100 mille in 1921, as against only 51 ten years ago. Lastly, it must be mentioned that all the professional men I have consulted unite in minimising the effect of dust and glare in the causation of total blindness. They are only indirect causes of blindness, according to them as they start *trachomatous conjunctivitis* which eventually leads to blindness.

Year	Venereal cases treated at Hospitals
1911 ..	6,032
1912 ..	6,306
1916 ..	5,990
1920 ..	8,393

356. Cataract Operations.—The figures regarding successful cataract operations in the State in the last three decades are an interesting evidence of the growing awakening of the people to the need of caring for their eyes. The concentration of such facilities in the State General Hospital in the City does not enable us to show how far cataract is correlated with the prevalence of blindness. But the marginal table is instructive. In the last decade there were five times as many cataract operations as in the decade previous.

Division	Number of successful cataract operations		
	1891–1901	1901–1911	1911–1921
State	23	101	564
Central Division ..	15	81	513
Northern Division ..	6	16	37
Southern Division ..	2	3	6
Kathiawad	..	1	8

357. Blindness by Sex and Age—Of all the infirmities, blindness is the only one in which women fall the easier prey. To every 1,000 males who are blind, there are 1,478 females who are so afflicted. In 1911, the corresponding ratio was 1,466. This preponderance of the females persists in all ages from 25 upwards. At the first quinary age-period (0-5) also females are shewn to suffer more from blindness than males. This is perhaps due to the greater neglect of female infants. The preponderance at the other ages is due to the exigencies of their cribbed and confined lives, and the rigorous exactions of their household cares.

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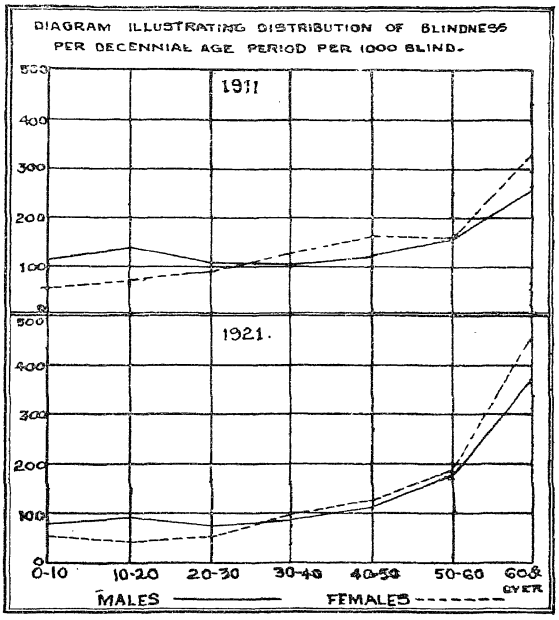
They live in dingy closed-in houses with little ventilation, and spend most part of their day in smoky cook rooms having to prepare food for their menfolk. We know from statistics discussed in Chapter I that the worst type of house-room is met with in Kathiawad. Here also the preponderance of females amongst the blind is most marked. In the margin, the order according to comfort of house-room is shewn to be almost exactly in inverse relation to the order according to the sex ratio amongst the blind.

Division or City	Proportion of female blind to 1,000 male	Order according to preponderance of females amongst blind	Order according to comfort of houses
City	1,107	5	1
Central Gujarat ..	1,444	4	2
North Gujarat ..	1,464	3	4
South Gujarat ..	1,465	2	3
Kathiawad	1,721	1	5

The diagram given in the margin shows the age distribution of the blind for the last two censuses. That blindness is an affliction specially associated with old age is convincingly proved by the accompanying diagram. 66 per cent. of the males and 76 per cent. of the females, among the blind population are 40 years of age and upwards. Congenital blindness does form from 15 to 25 per cent. of the total strength of this infirmity but on the whole the proportion of the infirm rises with the age of the population.



358. The Blind by Caste and Community—An analysis of the prevalence of this infirmity amongst the different classes of the population throws some light on how occupation and social environment exert an important influence on the causation of blindness. Its prevalence amongst Brahmans, Vanias and Saiyads may be due to their literary occupation. Amongst some Brahmans like the Modh, who are mainly engaged as cooks, blindness claims as high a ratio as 574 per 100 mille. Its commonness amongst religious mendicants is readily understood. Professional beggars are even known to blind their children to excite compassion amongst the charitable. Amongst Sonis, Sutars, and Bhavsars, the high ratio of their afflicted is due to their occupation. It is noteworthy that amongst these, males are more afflicted than females. Ghanchis owe the large proportion of their blind no doubt, to the exacting nature of their occupation conducted in dark rooms in congested urban areas. The Rabaris have a high ratio compared to the Kanbis and Kolis,

Caste and Community	Proportion of blind per 100,000 of each sex
General Population ..	*319*
Hindu	*338*
Selected Brahmans ..	483
Sonar, Sutar, Bhavsar	337
Kanbis	259
Marathas	270
Golas	141
Hindu and Jain Vanias	339
Ganchis	479
Dhed	556
Koli	257
Rabari	371
Parsi	*212*
Musalman	*294*
Vohora	181
Memon	231
Saiyad	337
Christian	*310*
Forest tribes (Hindu and Animist)	
Bhil	341
Dubla	256
Nayakda	265
Vasawa	184
Chodhra	102
Gamit	118
Religious mendicants ..	*516*

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because as cattle-graziers, they have to wander in the dust and glare. The Dheds have the uneviable honour of topping the above list in respect of blindness. To their filthy mode of living, coupled with their lax sexual standards, this high incidence must be ascribed. Amongst forest tribes, the ratios given above refer to the Hindu and Animist sections taken together, but it is remarkable that the Hindu sections amongst them show far higher ratios of the afflicted than their Animist *confreres*. Perhaps their Hinduisation inevitably leads to the abandonment of their free life in the shaded jungles and their living in dirty and congested huts in the settled villages and towns.

Tribe	Proportion of blind per 100,000 of	
	Hindu Section	Animist Section
Bhil ..	484	174
Nayakda ..	1,024	135
Vasawa ..	313	158

Leprosy

359. Main figures—The number of lepers returned in the State is 552 or 26 per 100,000 of the population. In 1911, the proportion of lepers to the population was 22 per 100 mille. Taking the sexes separately, we find that there are 35 male lepers, and 16 female, per 100,000 of each sex in the State. In 1911, the respective ratios of the afflicted were 31 and 12. Compared to the general average in India, the incidence of leprosy is not larger in Baroda. In India, in 1911, 51 males and 18 females, per 100,000, were returned as lepers. In the Bombay Presidency (including States and Agencies) in the present census, the proportion of lepers is 36 per 100,000.

Year	Lepers			
	Actual figures		Proportion per 100,000	
	Male	Female	Male	Female
1891 ..	397	172	32	15
1901 ..	182	95	18	10
1911 ..	327	118	31	12
1921 ..	384	168	35	16

360. Distribution of Leprosy by Locality—The area of greatest prevalence of leprosy is the Southern Division or Navsari *Prant*. Here 70 per 100,000 of the total population suffer from this dreadful infirmity. Central Gujarat follows with 37 lepers per 100,000. The Northern and Kathiawad Divisions follow after a long interval, with only 8 and 4 persons per 100,000 who are lepers. A comparison of the incidence of this disease with rainfall appears to indicate that damp, humid climates, and coastal areas composed of recent alluvium are rather more liable * to the leprous contagion than other places. Kahnam on the Narmada border has rather a high incidence (53) even after allowing for the lepers in the Asylum there, who are born outside the division. Perhaps the ineffective supervision over the lepers who are known frequently to run away may have led to these unfortunates spreading their disease amongst healthy people.

Division	Proportion of Lepers per 100,000 of each sex	
	Male	Female
Central Gujarat* ..	41	22
North Gujarat ..	6	2
South Gujarat ..	94	45
Kathiawad ..	10	6

* After allowing for lepers in the Leper Asylum who were born outside the Division.

Natural Area	Proportion of lepers per 100,000	Order according to prevalence of leprosy	Order according to rainfall
Charotar	16	7	7
Vakal	32	5	6
Kahnam	53	4	4
Chorashi	28	6	5
East Kadi	5	9	10
West Kadi	4	10	9
Trans-Sabarmati	3	11	8
Rasti	78	1	2
Semi Rasti	60	3	3
Rani	63	2	1
Kathiawad Middle Block	4	10	11
Kathiawad Scattered Areas	4	10	12
Kathiawad Coast Areas ..	15	8	13

361. Variation since 1911—A statement is appended in the margin which gives the variation in the figures since 1911 by four age-groups : below 20 years, between 20 and 45, between 45 and 60 and 60 upwards. The middle group (20-45) is taken because according to the authority of the Indian Leprosy

* It may be noted that this is against the experience of Bengal. *Vide* Mr. O'Malley's Report for 1911, p. 422.

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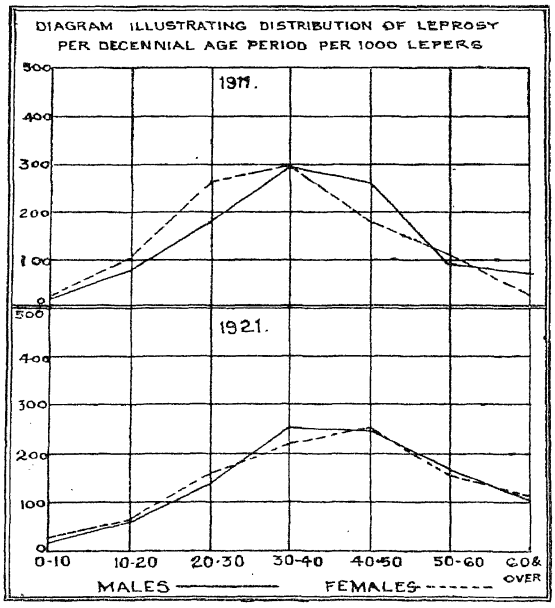
Commission, the bulk of the lepers are usually attacked by the disease between the ages of 25 and 30. It also happens that the disease enters the system latently and remains unnoticed for years.

Two other authorities, Daniellson and Boeck, have held that the average duration of life from the date of attack is between 9 to 18 years. One would hardly expect a leper's life to exceed beyond 60 years. Therefore all cases of lepers returned at 60 years and upwards are suspect. Many cases of syphilitic sores and white leprosy have through error of diagnosis, a chance of being mistaken for leprosy and included in the returns. From the table given above there appears to be little variation from the figures of 1911 up to the 45th year. In the period 45-60 the lepers have increased by 75 persons. Possibly this increase is perhaps due either to discovery of wilfully concealed cases or also to a certain extent to immigration. It is reported that owing to stringent steps lately taken in the Rajpipla State *, many lepers have fled across the Narmada to this State. Kahnam therefore, shows, apart from the Asylum inmates, a high ratio of the afflicted. The Central Division as a whole shows a large increase from the figures (both proportional and absolute) of 1911. In the age-group 60 and over, the lepers show an increase of 33, which I am inclined to regard as fictitious. The 1911 figures in this respect seem to have been nearer the truth. Whatever fresh attacks that happened in the last decade must be more or less confined to ages below 45. The actual figure in these ages hardly show any variation ; the fresh stocks therefore are presumed to fill up the deaths that must have happened among the lepers of 1911.

Year of Census	Number of lepers returned			
	Below 20 years	Between 20—45	45—60	60 and over
1921 ..	47	291	155	59
1911 ..	48	291	80	26
Variation ..	—1	....	+75	+33

362. Distribution by Age and Sex—Excepting blindness, all the other infirmities show that women are less afflicted than men. Amongst lepers particularly is this so, as there are only 44 females to one hundred males amongst them. According to the Indian Census Report of 1911, the sex ratio was even more favourable to the females than this. In this State, in 1911, the proportion was only 36 female to 100 male lepers. I am inclined to attribute this low incidence of leprosy amongst females in a large measure to wilful concealment. But it is possible that males may be more liable to the leprous infection than females. This disproportion, it may be added, is particularly marked about the ages 10-15 which is the marriageable period for females, and when the incentive to conceal the existence of leprosy in the family is therefore the strongest. At the higher ages, the tendency to conceal is weakened, and the proportion becomes a little higher. About 50-55, it becomes low perhaps because afflicted women are less solicitous



* The Bombay Presidency Census figures show that in the Rewa Kantha Agency (which includes Rajpipla) the number of lepers have declined from 166 in 1911 to 132.

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of public aid and suffer more in consequence and are thus subjected to a higher mortality. The marginal diagram shows the age distribution of the afflicted by sex for the last two censuses. It has been already explained in a preceding paragraph that this disease attacks the adolescent and adult ages and shortens the life of its victim considerably. A true record of lepers therefore should show very few victims alive at ages 60 and upwards. In this respect the census record for 1921 is more defective than its predecessor, or even that of 1901, because one-tenth of the total strength of lepers is returned aged 60 and over. In 1901, only 3 per cent. of lepers were of this age.

363. Prevalence of Leprosy amongst Castes and Communities—The caste incidence of leprosy does not throw much light on the influence of occupation and environment beyond the broad conclusion, that it is found more amongst the lower orders who are poor and improvident than amongst the higher. The comparative immunity which the figures show that the higher castes enjoy in this respect is much discounted however by the probability, or rather the certainty of their being more successful than the others in evading the curiosity of the enumerator. In the margin the proportions for the selected groups are given. Only the ratio for the afflicted amongst the forest tribes are noteworthy. As to the others, the absolute figures are so small that it is not worth while discussing them. In 1911, the ratios for Dubla and Vasawa lepers were shewn as 1,765 and 1,001 per 100 mille. These figures are open to suspicion, for the reason (as mentioned already) that they are calculated on the total population of the Animist section only, while the number of lepers related to both the Hindu and Animist sections together. Rao Bahadur Govindbhai mentioned as a cause for the high incidence of leprosy amongst these tribes that they ate the flesh of dead animals.

Tribe or Race	Proportion per 100,000 who are lepers
Forest Tribes ..	
Bhil	167
Dubla	148
Nayakda	81
Vasawa	147
Chodhra	73
Gamit	64
Hindus	*24*
Dhed	23
Koli	21
Gola	18
Marathas	15
Kanbi	10
Brahmans Vanias O. Rabaris, etc.	Below 10
Musalman	*10*
Memon	14
Vohora	4
Saiyad	.....
Parsi and Christian.	.....
Religious Mendicants (Hindu and Musalman)	*15*

364. The Leper Act of 1910—For the proper segregation of lepers and prevention of wandering and destitute persons afflicted with this disease from spreading its contagion to healthy people, the Leper Act of 1910 was passed, and it is still in force. Under this Act, the Anasuya Leper Asylum has been declared to be the asylum to which vagrant lepers were to be sent by the magistrates. The Act prohibits leprous persons from preparing or selling articles of food, drink or raiment. They are also forbidden to bathe and wash in public tanks or to conduct or ride in public conveyances (except railway trains). The provisions of the Act are very leniently enforced, but in municipal and urban areas, lepers are not now seen plying conveyances for hire, or selling articles of food, to the same extent as before.

365. Cure for Leprosy—This disease has remained at all times an enigma for science. Its causation is still a matter of hypothesis. The old Hutchinson theory about its spread through tainted fish does not seem now to receive much support. A statement issued by the British and Colonial delegates to the International Conference on Leprosy at Bergen in 1909 seems to embody the latest scientific ideas on the subject. It is stated therein that " leprosy is spread by direct and indirect contagion from persons suffering from the disease; it is most prevalent under conditions of personal uncleanliness; that it is not due to the eating of any particular food such as fish; that it is a disease of long duration, and becomes dangerous mostly when there is a discharge from mucous membranes or from ulcerated surfaces; and that the best administrative method of dealing with the leprous is segregation."

The best medical minds have engaged themselves upon devising a cure for this fell disease. The Nastin treatment is well-known. Deycke together with Dr. Reschad

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Bey, an Ottoman physician, "isolated from a non-ulcerated leprous nodule a streptothrix which they call *S. leproides*. They found that injections of this organism had marked curative effects due to a neutral fat which thay named 'Nastin'". The Nastin treatment was used in our local asylum but the intravenous treatment was found so painful that it was not further proceeded with. Vergueira used Collargol intravenously and subcutaneously and claimed success for his treatment. A large number of internal remedies has been tried notably with *chaulmoogra* oil, arsenic, salicylate of soda, chlorate of potash and salol. Attention has now been hopefully directed to a new variant of the old Indian remedy, *chaulmoogra* oil. The continued administration of this oil *per ora* having been found to have irritating effects on the mucous membrane of the intestinal tract, attempts were made "to isolate the active constituent of this drug, or to devise means for making its continued administration feasible." Experiments were conducted by Prof. Dean at Hawaii and what is known as "ethyl ester" has been prepared from the oil. Very successful experiments have been made with lepers and at least 48 of these unfortunates treated on this new method were paroled in October 1919. These lepers have been under observation for a long time, and they are still free from the disease. A mission doctor in Korea, Dr. Wilson, has, it is reported, by trying a heroic dose of the drug, found that it could be tolerated. Briefly the method is to add 100 grains of pulverised camphor to a pound of *chaulmoogra* oil boiled in a water bath. When the camphor is finally dissolved, this preparation is ready for use. It is then injected weekly into the deep gluteal muscles. This is continued with increasing dosage for months. To heal the obstinate ulcers, a special kind of ointment, with *Ichthyol*, *chaulmoogra* oil, etc., is also used. Very good results have been obtained with this treatment. It is claimed that sensation returns after a few months to the anæsthetic areas of the patient, who becomes rid of his thickened nodular appearance. In course of time, it is difficult even for a specialist to detect that the patient has been at all a leprous subject.

366. Some miscellaneous topics—Asylums and Institutions for the Infirm—Having discussed the local prevalence of each infirmity in turn, it now remains to conclude this chapter by referring to one or two miscellaneous topics.

The chief institutions for the infirm are the Lunatic Asylum in Baroda City, the Anasuya Leper Asylum on the Narmada in Sinor Mahal, and the two institutions for the education of the Deaf-mutes and the Blind in Baroda City and Mehsana town.

The Lunatic Asylum in the City has now been enlarged, the female ward now affording accommodation for a larger number of inmates. There has been no change in the principles on which dangerous lunatics are admitted. Compared to 1901, the increase in the number of inmates in the asylum, as it will be seen from the margin, points to the growing popularity of the institution. The numbers shewn in the margin presumably are those that are in residence in the census month of each year. The annual average of lunatics treated at the Asylum was 66 in the last decade. The annual average of persons discharged "cured" was 21, so that rather less than one-third of lunatics admitted every year got full benefit of the treatment.

Year	Number of lunatics in the asylum		
	Total	Male	Female
1901 ..	14	Not av	ailable
1911 ..	25	20	5
1921 ..	60	42	18

The Leper Asylum, situated on the banks of the Narmada, usually attracts a large number of lepers during the year, on account presumably of the supposed sanctity of the soil, from the rubbing of the dust of which leprosy is said to be cured. The Leper Hospital was established in August 1890, alongside of the temple to Anasuya Mata, one of the godlings of disease, and an *Anna chhatra*, or Asylum, has been maintained since that date with accommodation for 100 inmates. This accommodation, it appears, is only one-fifth of the total leper strength in the State. The figures in the margin show that leper inmates in the Asylum are rather on the decline. The annual average of lepers treated at the hospital in the last decade was 168. The largest number treated in any one year was in 1912 when 196 lepers took advantage of the institu-

Year	Number of inmates		
	Total	Male	Females
1901 ..	60	Not av	ailable
1911 ..	67	48	19
1921 ..	59	44	15

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tion. The unpopularity of the Nastin treatment (which was discontinued afterwards) may have led to these unfortunates avoiding the hospital. One of the features repeatedly reported by the Asylum authorities is that a large proportion of lepers taking advantage of the institution invariably abscond after a short while. A larger and more efficiently managed institution under the direct supervision of the central medical authorities and enjoying the latest facilities and conveniences of treatment is imperative, if this most dreadful of all human afflictions is to be stamped out from the State.

The School for the deaf-mutes and the blind in the City was opened privately in 1909, by a teacher who with another had been deputed by the State to the Calcutta Deaf and Dumb School for training. In 1911, a monthly grant of Rs. 50 was allowed to the school, which was raised to Rs. 75 two years later. From January 1, 1915, it has been conducted as a Government institution. Starting with only one child in 1909, it had 30 children on its rolls in July, 1920. 6 of these were girls and 24 boys; 26 were deaf and 4 blind. The school has two sides, literary and industrial. Teaching is done in the children's mother-tongue, Marathi or Gujarati. A practical knowledge of Arithmetic, History and Geography is also given. Each child is also taught some particular industry with a view to enable him to earn his livelihood.

The Mehsana School for the deaf-mutes and the blind was opened by the other teacher who was sent to Calcutta for training, in 1913 as a private institution, with 3 deaf-mutes. A Government grant of Rs. 25 monthly was soon after asked for and sanctioned. The institution was taken over by the State from January 1, 1915. The present strength of the school is 37 children, of whom 30 are deaf and 7 blind. 28 of these come from outside Mehsana town. Besides instruction in the three R's, industries, drawing, tailoring, wood work and knitting of socks are also taught. It will be seen therefore that, in these two institutions, 56 deaf-mutes and 11 blind children are being looked after. The deaf-mutes aged 5-15 number 234 in the State, so that educational provision for about 24 per cent. of these unfortunate children has been already made. The blind of school-going age number 497, and for these adequate provisions have not yet been made. Full details however of these defectives have been extracted from the Census Schedules and given to the authorities, and it is to be hoped that in future, these institutions will expand in their sphere of usefulness and be able to cater for a much larger proportion of these defectives than they have hitherto done.

367. Civil Condition of the Infirm—It is of great public interest to know how many of the infirm are married, and how many are widowed. Of 8,901 afflicted persons, 2,760 or 31 per cent. are married and 3,944 or 44 per cent. are widowed. In the general population 48 per cent. are married, so that affliction does presumably inhibit marriage to a small extent. Of the married infirm, only 76 males are below the age of 15, so that one may infer that the bulk of the afflicted persons who are married acquired their infirmity after marriage. Of the female infirm who number 4,829, 584 are unmarried, but the greater portion of these unmarried–396–are below the age of 15. There are 23 females amongst the afflicted who are unmarried, although aged 40 and over, 52 married females amongst the infirm are children not yet fifteen. Leprosy figures indicate that of 168 female lepers 65 are married, but they are all aged 15 and over, so that presumably their marriage took place before the signs of their disease became patent. Male lepers number 384. 189 of these, or about half, are married. But there is a cheerful disregard of the social consequences of their affliction in respect of the civil condition of the insane. Of 595 male lunatics, 162 are married and 92 are widowed. Amongst the insane women, who number 399 altogether, 155 are married. A remarkable feature of the civil condition figures is the large proportion of the female infirm who have returned themselves as widows. No less than 2,879 or 60 per cent. of these unfortunate women have passed off as widows. I take it that a great many of them are aged spinsters who are ashamed to own that they are still unmarried. A few may be abandoned wives whose husbands had left them as soon as they were overtaken by their afflictions.

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SUBSIDIARY TABLE I.—Number afflicted per 100,000 of the population at each of the last five Censuses

Natural Division	Insane										Deaf-Mute									
	Male					Female					Male					Female				
	1921	1911	1901	1891	1881	1921	1911	1901	1891	1881	1921	1911	1901	1891	1881	1921	1911	1901	1891	1881
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Baroda State	**54**	**30**	**15**	**43**	**51**	**39**	**21**	**9**	**27**	**34**	**34**	**29**	**41**	**45**	**93**	**22**	**13**	**28**	**30**	**62**
Central Gujarat (with city) ..	67	33	19	37	45	48	20	9	26	23	31	25	36	43	77	18	14	21	27	51
North Gujarat	47	26	9	45	56	33	20	5	28	42	35	20	28	37	93	21	10	22	25	60
South Gujarat	51	40	25	55	57	47	33	17	24	46	39	63	77	81	128	32	19	53	45	84
Kathiawad	41	17	10	35	34	19	2	8	25	8	27	14	57	44	112	27	5	38	45	92

Natural Division	Blind										Lepers									
	Male					Female					Male					Female				
	1921	1911	1901	1891	1881	1921	1911	1901	1891	1881	1921	1911	1901	1891	1881	1921	1911	1901	1891	1881
1	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Baroda State	**249**	**129**	**75**	**161**	**248**	**395**	**204**	**95**	**235**	**351**	**35**	**31**	**18**	**32**	**39**	**16**	**12**	**10**	**15**	**17**
Central Gujarat (with City) ..	195	91	57	122	189	311	134	57	147	243	50	38	21	39	51	23	16	16	22	22
North Gujarat	285	158	62	193	305	438	249	85	304	434	6	4	2	12	18	2	1	1	4	6
South Gujarat	215	114	113	137	210	318	177	136	186	313	94	91	59	89	92	45	36	27	34	41
Kathiawad	351	169	139	187	250	647	309	205	291	415	10	15	13	16	19	6	..	5	15	8

The figures for the Insane and the Lepers include the inmates of the Baroda City Lunatic Asylum and the Anasuya Leper Asylum in Sinor Taluka in Baroda *Prant*. The corrected proportions for the Central Gujarat Division in which both these asylums are situated for these infirmities work out as under:—

Insane 63 males, 46 females per 100,000

Leper 41 males, 22 females per 100,000

after deducting the number of inmates born outside the natural division. The birthplace figures for other years than 1921 are not available.

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SUBSIDIARY TABLE II.—Distribution of the infirmities by age per 10,000 of each Sex

Age	Insane										Deaf-Mute				
	Male					Female					Male				
	1921	1911	1901	1891	1881	1921	1911	1901	1891	1881	1921	1911	1901	1891	1881
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0—5 ..	50	94	198	187	244	25	294	248	32	169	352	530	289	335	320
5—10 ..	857	1,097	397	599	658	802	1,030	124	734	904	1,924	1,887	994	845	1,025
10—15 ..	1,025	877	530	1,140	987	902	932	1,111	766	1,074	2,276	1,357	1,211	1,426	958
15—20 ..	958	972	794	1,364	1,265	1,078	1,274	1,481	1,809	1,074	1,247	1,324	1,236	1,109	921
20—25 ..	1,294	1,191	1,655	1,308	2,286	752	1,422	1,481	1,002	1,949	921	1,126	967	1,021	1,381
25—30 ..	1,697	1,348	1,060	990		902	1,078	1,111	1,002		840	1,093	1,012	951	
30—35 ..	1,261	1,097	1,457	1,121	2,199	1,153	1,470	740	970	1,949	623	662	791	951	1,419
35—40 ..	605	939	994	785		852	735	493	809		515	497	606	528	
40—45 ..	639	846	1,126	879	1,316	827	490	986	766	1,525	407	464	1,211	792	1,429
45—50 ..	403	533	530	411		627	148	493	420		271	397	241	458	
50—55 ..	555	376	729	599	501	1,203	490	618	679	734	325	166	670	475	1,306
55—60 ..	269	158	199	75		250	98	248	364		163	166	241	264	
60 and over ..	387	472	331	542	544	627	539	866	647	622	136	331	53'	845	1,241

Age	Deaf-Mute					Blind									
	Female					Male					Female				
	1921	1911	1901	1891	1881	1921	1911	1901	1891	1881	1921	1911	1901	1891	1881
1	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0—5 ..	742	407	572	514	231	288	491	291	382	286	217	305	236	326	191
5—10 ..	1,310	2,114	1,031	1,229	723	532	688	742	639	547	304	275	526	398	417
10—15 ..	2,140	1,707	1,146	1,429	831	525	756	728	610	513	207	405	604	351	390
15—20 ..	1,004	1,138	954	971	677	398	606	517	530	545	188	345	515	446	345
20—25 ..	830	1,382	1,107	771	1,307	405	556	755	674	1,123	195	461	537	476	748
25—30 ..	1,092	732	726	600		376	547	636	595		328	461	760	512	
30—35 ..	961	976	687	829	1,277	441	526	755	694	1,123	481	581	705	593	1,114
35—40 ..	480	569	954	457		408	500	702	600		489	666	805	497	
40—45 ..	480	325	687	686	1,415	627	565	795	744	1,273	686	771	1,140	856	1,348
45—50 ..	175	407	152	343		489	634	503	496		543	836	459	457	
50—55 ..	393	81	648	857	1,708	1,138	1,078	953	1,002	1,575	1,268	1,231	1,174	1,207	1,633
55—60 ..	87	81	305	171		635	491	517	282		595	365	302	421	
60 and over ..	306	81	1,031	1,143	1,831	3,738	2,562	2,105	2,752	3,015	4,499	3,298	2,237	3,460	3,814

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SUBSIDIARY TABLE II.—*continued.*

Age	Lepers									
	Male					Female				
	1921	1911	1901	1891	1881	1921	1911	1901	1891	1881
1	32	33	34	35	36	37	38	39	40	41
0—5	26	92	165	..	22	119	..	421	233	57
5—10	182	123	385	126	111	179	254	631	698	344
10—15	313	123	549	479	467	179	254	421	581	747
15—20	286	671	440	302	622	476	762	316	872	862
20—25	599	854	1,154	1,184	1,755	773	1,272	210	988	1,495
25—30	807	915	1,484	1,134		833	1,357	1,790	1,220	
30—35	1,198	1,502	1,209	1,007	2,534	1,310	1,357	2,527	1,047	2,298
35—40	1,380	1,441	1,704	1,033		893	1,610	1,474	872	
40—45	1,354	1,748	604	1,713	2,266	1,310	1,187	210	1,454	1,610
45—50	1,094	854	879	982		1,190	593	526	465	
50—55	1,198	671	934	982	1,357	893	846	843	698	1,438
55—60	521	305	219	252		714	254	105	58	
60 and over	1,042	701	274	806	866	1,131	254	526	814	1,149

SUBSIDIARY TABLE III—Number afflicted per 100,000 persons of each Age-Period and number of females afflicted per 1,000 Males

Age	Number afflicted per 100,000								Number of Females afflicted per 1,000 Males			
	Insane		Deaf-Mute		Blind		Lepers		Insane	Deaf-Mute	Blind	Lepers
	Males	Females	Males	Females	Males	Females	Males	Females				
1	2	3	4	5	6	7	8	9	10	11	12	13
0-5	2	1	10	12	58	64	1	1	333	1,308	1,114	2,000
5-10	33	23	46	21	94	88	5	2	627	422	842	429
10-15	45	30	62	41	106	70	9	2	590	583	583	250
15-20	61	56	49	30	117	99	12	10	754	500	697	727
20-25	97	37	43	24	140	98	29	16	390	559	712	565
25-30	109	42	33	29	111	154	33	16	356	806	1,291	452
30-35	84	54	26	26	135	227	51	26	613	957	1,612	478
35-40	47	50	25	16	145	289	69	22	944	579	1,768	283
40-45	55	47	22	16	249	398	75	31	868	733	1,616	423
45-50	50	59	21	10	280	524	88	48	1,042	400	1,642	476
50-55	62	98	23	18	585	1,053	86	31	1,455	750	1,647	326
55-60	69	57	26	11	752	1,366	86	68	625	333	1,385	600
60 and over ..	48	49	10	14	2,140	3,569	84	37	1,087	1,400	1,779	475
Total ..	54	39	34	22	249	395	35	16	671	621	1,478	438

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CHAPTER XI

CASTE

STATISTICAL DATA

Subject	TABLES	
	Imperial	Subsidiary
Caste, Tribe, Race or Nationality	XIII	....
Castes classified according to their traditional occupation ..	....	I
Variation in Caste, Tribe, etc., since 1891	....	II

General Observations

368. **Reference to Statistics**—Imperial Table XIII gives the statistical information by administrative divisions of the numbers and distribution of castes, tribes and races inhabiting the State. Subsidiary Tables I and II, appended to this chapter are prepared from this table : the first classifies the caste returns into traditional occupational groups in the manner favoured at the census of 1911 ; and the second gives the variations since 1891.

369. **Utility of the Return**—The utility of the record of castes has been often doubted. For the 1901 Census, a previous Census Commissioner advocated the dropping altogether of the enquiry into the caste distribution of the people, on the ground that the changes in the caste distribution in a particular locality (province or state) or in the tendencies and attitude of the different social strata to such questions as marriage, education, occupation and the like are spread over such long intervals that they do not easily lend themselves to statistical analysis from decade to decade. It was argued therefore that a decennial record of caste was an unnecessary and costly luxury. Recently a resolution was tabled in the Indian Legislative Assembly in favour of the omission of the question about caste in the Census Schedule on the ground that the caste-returns were notoriously inaccurate, and that the census in a manner gave statutory recognition to social precedence of particular groups and thereby encouraged feuds between caste and caste, for example between Kayasthas and Vaidyas. This last objection does not seem to be based on a complete understanding of the scope of the census enquiry regarding Caste. The instructions to enumerators regarding Caste were to enter the caste or tribe of Hindus, Musalmans, Jains, Sikhs, Aryas, Brahmos and aboriginal tribes and the race of Christians, Buddhists, Parsis, etc. In the Manual for Supervisors, the instructions were fuller :

> "In column 8 the real tribe or caste must be entered and not some general term common to several castes. Thus Koli, Kanbi, Bania or Brahman are general terms. When a person returns himself as Koli, Kanbi, Bania or Brahman, he should be asked what kind of Koli, Kanbi, Bania or Brahman he is, when the real caste name such as Koli-Patanwadia, Koli-Baria, Kanbi-Kadva, Kanbi-Lewa, Bania-Lad, Brahman Audich, etc., will be ascertained. Again Kadia, Chudgar, Nesti, Patva, Gandhi, etc., are words indicating occupation and not caste and should be avoided. For instance, if a person returns himself as Kadia, he should be told that it is the name of his occupation, but he should say what his caste is, whether Kachhia, Sathawara, Kanbi-Lewa, etc., and whatever it may be should be entered. Lastly, terms indicating locality such as Hindustani, Pardeshi, Marwadi, etc., must not be used. The real caste of these people must be found out."

In these instructions, there is no statutory perpetuation of caste distinctions. It is true that an ethnographical survey may give rise to caste wranglings and insidious attempts to seek official sanction for a spurious status on the part of castes aspiring to rise in the social scale. Mr. Enthoven of the Bombay Ethnographic Survey pointed out in a recent paper how his investigations turned his office into a kind of Caste-arbitration tribunal. But the census record itself is independent of any caste feuds regarding status. It is the use that is made of it that matters. In the 1901 Census, an attempt was made to fix the social precedence of castes.

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Mr. Dalal's Report of that year contains the most valuable results of an exhaustive and painstaking enquiry. But the discussion that followed these attempts at classification by social precedence engendered a considerable amount of inter-caste bitterness which was not quite assuaged by 1911. The Census of 1911 therefore wisely chose a more colourless and innocuous plan of classification by traditional occupation. The chapter on caste in the Census Reports of that year however devoted a considerable portion of their space to ethnography and caste-origins. Much of the matter that had been discussed before was traversed again. On this occasion it has been decided to confine our attention to the demographic and sociological aspect of caste as an element of the population, and in that view there can be no doubt that caste is still a vital factor. As the Census Commissioner's note points out:

> "Marriage which is one of the essential factors governing the rise and fall of population is practically controlled by caste, and the relative fecundity of the classes in different social strata could not be discussed without reference to the statistics showing the changes in the proportions of the married and unmarried of different ages in different castes. Similarly the interest and practical utility of the statistics of literacy, infirmities and occupations is considerably enhanced by their analysis according to the principal castes. There are social and educational questions which are intimately connected with caste and in the solution of which the information given by the caste returns will be of great value. I need only instance the questions connected with the treatment of the depressed classes. Occupation is closely associated with caste, and in discussing the occupational returns and industrial progress we want the latest statistics of the principal industrial and labouring castes to combine with the occupational figures. An estimate of the progress or decline of the cottage industries cannot be made without the comparative statistics of the castes chiefly engaged in them."

As to the element of error, there is no doubt about the greater accuracy of caste returns compared to, let us say, figures regarding Animists, or the returns of age. The bulk of the people return their castes correctly. The vast majority of castes are local, the tendencies of evasion are also well-known and the ways how these are countered are familiar to every Compilation Office. Besides, these tendencies themselves are of great interest as throwing light on social changes, and no census enquiry can afford to ignore them.

370. Scope of the Chapter—The objection attaching to an ethnographical survey ceases to have force when the scope of the enquiry is narrowed down to a discussion of the demographical aspect of caste. As shewn above the statistical information regarding caste is combined with other data: with literacy (in Imperial Table IX), with infirmities (in Imperial Table XII-A), with marriage and age (in Imperial Table XIV) and with occupation (in Imperial Table XXI). The bearings of caste on these different problems are dealt with in their respective chapters. In the present chapter, our concern will be mainly to test the accuracy and value of the caste return on which these correlations are based, and to appraise them in respect of the variations in the figures of different censuses. It is of little concern how we classify castes for this purpose. The classification adopted on the basis of traditional occupation in 1911 has been continued on this occasion also. How far such traditional occupation obtains in the caste at present will form one of the subjects of enquiry in the next chapter.

A proper appraisement of the accuracy of the return will enable us to utilize the information with a view to see how the attitude of the people towards caste is shaping under the pressure of modern economic and intellectual influences: whether the present day tendencies are making for fusion or further separation and in what way, if at all, caste is lending itself to new ideals such as that of nationality.

371. Accuracy of the Return—As the main concern of this chapter is statistical, it is to the accuracy of the figures that we must first turn. A mass of highly useful information regarding the origin, customs and interrelation of Gujarati castes was collected by Mr. Dalal in 1901, which requires little emendation even now and to which my own contribution can be but insignificant. Mr. Govindbhai prepared an excellent glossary of Castes, Tribes and Sects both as an appendix to his Chapter XI and also as a separate publication. This glossary contains material which has been culled from a multitude of sources, not the least valuable of which is Mr. Govindbhai's own personal knowledge. This work has facilitated the work of this census and has helped it to have a very accurate return of castes and tribes in existence in the State.

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372. Caste Index : its utility—In this census, as on the previous occasion, an alphabetical Caste Index in the vernacular (*Nyat jat ni kakkāvāri*) was prepared in two parts, the first part containing true caste-names of 262 castes and the second containing 55 indefinite and ambiguous names or variant names of castes, chiefly collected from the enumeration books of previous censuses, which were to be avoided as affording no clue to the actual caste or group of persons so called. Included under this second list were such diffuse descriptive names as Kshatriya and Vaishya, two of the four archaic divisions of Hindu Society. These general terms have more or less lost their ancient significance and the various social groups that are known, or have aspirations, to belong to these have now themselves settled down into mutually exclusive endogamous groups or independent castes. Of such descriptive names, Brahman, Kanbi, and Vania have been alone retained in the Caste Table, although the sub-groups comprised under each of these heads are mutually exclusive and apparently different castes. Secondly the list also contains such occupational entries as Chudgar (ivory or wooden bangle makers), Kandoi (sweetmeat sellers), Kātpitia (sellers of fuel), Achāri (Brahman cooks), Kadia (builders), etc. The third group of mistakes relates to vague territorial names like Pardeshi or modern descriptions like Bengali, Madrasi, Dakshini, etc. Lastly there are professional names or names suggestive of status or civil condition or sect names. Examples of these entries are Thakor, Garasia, Sevak, Gulam, Sanyasi, Sadhu, Brahmachari (celibate), Paramhansa (ascetic of superior rank), Ramdepir (sectaries of that name), Meshri (generic name for Hindu Vania), etc.

The circulation of these lists was of very great use to the supervising officers in securing a close and intelligent scrutiny of the information entered by the enumerators in column 8 of the Schedule. But it must be remembered that there is a danger in stereotyping the lists, as the flux of time may make them out of date. The history of caste shows that inspite of its seeming rigidity it is capable of expansion in a multitude of ways. Race, occupation, residence, language, religion, status, manner of living or diet, attitude towards a particular social practice like the remarriage of widows :—all have entered into the caste-complex some time or another in its long history. In the above enumeration of types of "spurious" entries we have seen how occupation, status, civil condition, sect, etc., are the different sources of these names. There is no knowing whether in the future what are spurious to-day will become true caste designations. All that one can postulate is that the present true caste-names are old ethnic, functional, religious or other distinctions which have now acquired historic fixity and settled down into rigid caste differentiations.

373. Unintentional errors—The bulk of the entries in List II above referred to represent unintentional errors. The average lower class Indian has little knowledge of the proper name of his caste or sect. The first answer that will come to him when asked about his caste will be to name his occupation. If pressed further, he will simply give out his class or sept name, or even his own *atak* (surname). Besides the types of errors mentioned in the list, this census also disclosed a few curious entries—some of which may be mentioned "Vadvasia" (from Kadi taluka) was found to be a surname used amongst Ravalias. "Targala Maretha" (reported from Chanasma, West Kadi) seems to be a mistaken entry for a section of Kolis who combine a very much watered type of Sakti worship with Musalman beliefs and have taken to the profession of dancing. That is why they are called Targalas. "Khalas" reported from Mehsana town was found on enquiry to be identical with Hindu Kharwas, numbers of whom are found in Baroda City. "Mandlia Rawal" (reported from Patan) appears to be a local class name of the Audich Sahasra Brahmans. "Utara" (from Vyara) is the name of a section of Kansaras (coppersmiths), dealing in base metals; they are the same as Otaras of the 1911 table. In Kadi *Prant*, some Bhils have described themselves Menas. These are the Minas of Rajputana. "Talaya" is a mistake for Talavia, a sub-caste of Dublas. Entries such as "Mudhai" and "Bhuva" were found on local enquiry to belong to Rajputs.

374. Intentional errors—The other class of errors is the result of deliberate misrepresentation. These errors affect the returns more seriously than the other type. They arise usually when certain aspiring castes call themselves by new names, or when individual members of these pass off as belonging to some castes higher than their own. Generally the castes to which these aspiring groups have sought to affiliate themselves are Rajputs and Vanias. Certain of these tendencies are due to progress in education; this point has been already dealt with

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in Chapter VIII (para. 288). Other reasons are change in social practices or occupations that had previously been traditionally associated with the caste in question. In the paragraph above quoted, the case of the Modh Champaneri Ghanchis was mentioned. As it has been decided not to record septs of sub-castes, it was not found possible to accede to the request of the representatives of this community to treat them separately. They were careful however not to show any desire to be mingled with the Modh Vanias, but the fact that they wished to be tabled as "Modh Champaneri Vanias" was an eloquent testimony to the secret wish of their hearts. It is true, as Mr. Govindbhai's glossary points out, that these Modh Champaneris were originally Modh Vanias but since then they owed their fall to the taint of oil*. The Khambhars—a section of Kachhias (the caste of market gardeners, originally Kanbi, or even of Koli descent)—petitioned in this census to be reckoned separate from Kachhias and treated as a Vania caste. Their arguments were singularly unconvincing as to the latter part of the claim. Among the Kachhias they do not even rank the highest. Like all the other divisions within the caste, they neither dine together nor intermarry. Their claim to *roti vyavahar* (commensality) with Vanias is stoutly denied by the latter. Their numbers are very few in the State; taking all these things into consideration, it was finally decided not to accede to their request.

375. The case of Barias and Khants—The Barias of Padra were particularly obstreperous about their claims. They pursued me wherever I went with a ponderous *dossier* of documents and genealogical trees. They founded their claim on their Rajput (Padhiar) surnames and their having given daughters in marriage to Rajputs. There is no doubt that a great many Barias have Rajput patronymics. Rajputs on the other hand are notorious for the indiscriminate manner in which they seek their wives from the lower strata. The prestige of their caste attracts a number of spurious entries. As it has been pointed in Chapter IV (para. 152), there are varying opinions about Kolis: some regard them as hardly different from the Rajputs; others would scarcely distinguish them from the aboriginals. Possibly both points of view are partly right. The nature and the extent of the Rajput strain determine the differences. Kolis in Western Gujarat (Vakal, Rasti, Charotar and Kahnam) are more Rajput than those of Eastern Gujarat (Chorashi and Trans-Sabarmati) who are hardly distinguishable from Bhils. The Khants and Barias are of high repute socially—especially the Patelia (Talabda) section among them,—and they have given brides to Rajputs, or failing Rajput husbands, to Molesalams or converted Rajputs. They will have no truck with the lower class Kolis—Patanwadias or Kotwalias. The Khant Kolis in North Gujarat have at some places recorded themselves as "Thakur Solanki". In Central Gujarat the term Dharala is generally used for all Kolis high and low, but possibly there is a social gradation between the Baria proper or Khant Baria and the Talabda Barias. Talabda (Sanskrit, *Sthalodbhava*, raised from the soil) is the term given to the Hinduised Sudras amongst the aboriginal tribes who submitted to the Gujar invaders and accepted Hinduism. Our present state of knowledge regarding the various Koli clans is obscure, and we must wait until a complete ethnographical survey is undertaken. In the meanwhile it seems reasonable to suggest that the Khants and Barias should be separated from the general head of Kolis at least, even if they are not included under Rajputs. It is among these sections that Hinduisation of the pronounced type is most evident; the highest families in the social sense among them prohibit widow-remarriage and their features generally proclaim a very evident Rajput admixture.

The Barias are not the only people to claim kinship with the Rajputs. The attitude of the Kalals has also to be noticed. A memorial from the Shaundika Kshatriya Sabha forwarded through a Calcutta vakil claimed that the Kalals were Rajputs or Kshatriyas. They are supposed to belong to the Agnikala Haihaya Vansiya Sept of Kshatriyas. Finally the Dheds (in Vyara) have begun to call themselves "Mayavansi" Rajputs. Local enquiries have failed to elicit any further particulars about the origin of the name "Mayavansi." Some of the Dhed patronymics are certainly Rajput—Vaghela, Dabhi, Parmar, Solanki, etc.

376. The case of Brahmabhats—The Brahmabhats also applied to be included as a sub-caste of Brahmans. Amongst the Bhats, the Brahmabhat is marked off from the rest of the community by his more correct Brahmanical observances, vegetarianism and stricter prohibition of widow-remarriage. In

* In their original application they disclaimed all connection with oil. But under my cross-examination their representative admitted that they did once deal in oil, though not in the manufacture of it.

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Gujarat and Kathiawad, the Brahmabhats wear the sacred thread, and do not dine with the other divisions or with Vanias or Kanbis. Their claim to a separate treatment deserves therefore more serious consideration. The allegation as to their descent from a Kshatriya father and a Brahman widow is of course denied by them and may be held to be unproven ; regarding the Brahmabhats, it may be stated without much doubt that they are a Brahman community.* In the Bombay Census Report of 1911, it is stated that they are "almost certainly degraded Brahmans. Their degraded status is easily explained. Their close relation with Rajputs invariably led to a departure from Brahmanical standards and they declined in consequence in the eyes of other Brahmans." But their whole tradition and caste history are wrapped in romance. The weight of evidence shows that Gujarat Brahmabhats were originally Brahmans from Allahabad and Marwar. Their devotion to poetry is seen in the worthy place their poets have taken in the literary history of Gujarat. The abandonment of priestly functions is not a reason to exclude them from Brahmans. On the whole they have as good a reason to be called Brahmans as Anavalas, who have no priests or mendicants amongst them. But as the question regarding their place in the scheme of Hindu castes does not seem yet to have been finally decided, and the census is no forum for such a decision, the Brahmabhats are placed provisionally outside the Brahman fold, but as an allied community.

In the application of the Modh Champaneris and the Khambhars, the tendencies to set up claims are typified. As the India Census Report of 1911 pointed out:

"The claim to a new name and status is almost invariably accompanied by copious quotations from the Shastras and by commentaries full of fanciful statements and false analogies, backed up by vicious syllogisms, such as :—

The Vaisyas are traders ; we are traders ; therefore we are Vaisyas.

For the desired deduction the major premise should be 'all traders are Vaisyas,' but this of course is not the case. There are many trading castes that are admittedly not of Vaisya rank.

These claims to higher status are generally bolstered up by a *vyavastha*, declaration, or obtained from certain pandits, whose good offices have been secured, in some such terms as the following :—'The . . . . . have the same social observances as the Vaisyas, their occupation is that of the Vaisyas ; they say their real name is. . . . . .which is mentioned by Manu as a Vaisya caste. Therefore they may be regarded as Vaisyas.' No attempt is made to investigate the actual facts, or the past history and associations of the community."

377. Parvenu accretions to Castes—In regard to these tendencies, it cannot be too often emphasised, that the aim of a census record is to get at the real strength of a particular social group. If a particular sub-caste wishes to recede from its parent group or if it chooses to call itself by a separate name its separate record under that designation is permissible provided its strength is sufficiently large to warrant such a treatment and provided also such a name causes no risk of confusion. Claims to be treated under the ancient four-fold classification should always be disregarded, as they raise awkward questions of precedence, with which the census has absolutely no concern. Perhaps after this census, when the exclusively demographic aim of the Caste-record is realised, there will be in future few occasions for Caste-petitions.

The difficulty in regard to intentional errors is not so much with concerted attempts on the part of a whole caste or sept like the above to rise higher in the social scale. Most of these claims are well-known and the instructions to the enumerators are precise enough to counter all these attempts wherever they are found to be unjustified. But what is more difficult is to trace the insidious accretions to castes of *parvenu* individuals. A large community like the Lewa Kanbi or the Rajput is peculiarly open to risks of invasions of these kinds. Caste control is looser there than in a smaller and more compact community. Restrictions as to marriage also cannot always be enforced and there are perpetual accretions to these castes from various sources which are affecting the purity of its composition. It is in reference to this continual liability to accretions of this kind that the proverb says, *Garasio gozaro nahi ane Kanbi nyat baharo nahi* : a Girasia is never tainted nor is a Kanbi ever an outcaste. Like the Maratha Shindes and the Bengali Shagirdpeshas the Kanbis have their bastards; the issue of the *chakardis* (maid servants) of Kanbi households are called *gharjayavans* (or left-handed families) and are now beginning to call themselves Rajputs. The Gulam Kolis of Navsari are similarly the issue of irregular unions between the *ujaliat* (higher) classes and Kolis and Dublas. The issue of mixed marriages or unions between Parsis and

* Mr. Enthoven in his *Tribes and Castes of Bombay* (Vol. I, page 126) acknowledges that the Brahmabhat is a distinct entity, tracing its descent from Kanojia Brahmans.

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aboriginal tribes (Dublas), the Khavas and Gola Castes of Kathiawad and the Anglo-Indian are other instances of classes of people from whom individuals are continually attempting to affiliate themselves into the next higher group. These instances disturb the true extent of the variations but they are not so numerous as to affect the general accuracy of the whole. Throughout the compilation stage, searching local enquiries were instituted and doubtful cases were corrected. Few major errors of the intentional or unintentional variety have been left uncorrected and the figures for castes may be accepted as a fairly valid record of their numerical strength. Later on in connection with the discussion on variation, the factor of deliberate falsification will be referred to wherever necessary.

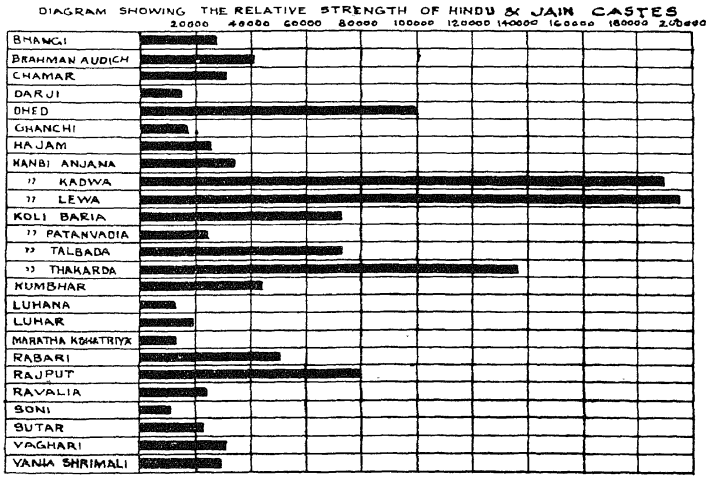
Distribution and Variation since 1872

378. Strength of the main Castes—Brahmans of all kinds number 113,825 including 73 Aryas in this census. Kanbis of all kinds (including Deccani and Kokani Kunbis) number 434,479 of whom 979 are Jains and 133 Aryas. Kolis of all kinds number 387,541 (including 10 Aryas). Vanias of all kinds (Hindu, Jain and Arya) number 78,457 (39,940 Jains and 27 Aryas). The Rajputs number 79,308 (including 124 Aryas and 6 Jains). The forest tribes (Hindu and Animist sections together) number 258,447. The untouchable or depressed classes number 176,924 (including 103 Aryas). The Musalmans with foreign strain number 56,993. Local converts number 90,892. The proportional strength of their groups is indicated in the marginal statement.

Name of Group	Percentage of total population
Brahman	5·4
Vania (Hindu and Jain)	3·8
Rajput	3·7
Kanbi	20·4
Koli	18·2
Forest Tribes ..	12·2
Untouchables ..	8·3
Musalmans with foreign strain.. ..	2·7
Local converts ..	4·3
Others	21·0

379. Strength of Hindu and Jain Castes—Taking the Hindu and Jain castes individually (without reference to main class names) and excluding forest tribes we may divide them according to strength into the marginally noted statement. In the first group will be Lewa Kanbis (including Patidars) numbering 194,145 persons, Kadwa Kanbis (188,627) and Thakarda Kolis (136,068). In the second group are Dheds (99,546), Rajputs (79,178), Barias (72,970) and Talabda Kolis (72,700). In the third group occur only one Brahman caste—Audich (40,473), and one Vania—Shrimali Jain (24,404). Besides these there are Anjana Kanbis (32,760), Patanwadias (22,074) and Makwana Kolis (21,664), Rabaris (49,874), low type labouring groups like Vaghri (30,659) and Rawalia (23,917) and unclean castes like Bhangis (27,548) and Chamars (35,147). Thus these 20 castes absorb 1,244,711 persons or about 74 per cent. of the total Hindu and Jain population (less forest tribes). A diagram is given above showing the relative strength of Hindu and Jain castes that have a strength of at least 10,000 persons.

Size of Hindu and Jain Castes		
Groups containing Castes with a strength of	Number of castes	Strength
I 100,000 and over ..	3	518,840
II 50,000-100,000 ..	4	324,394
III 20,000-50,000 ..	13	401,477
IV Below 20,000 ..	215	445,302



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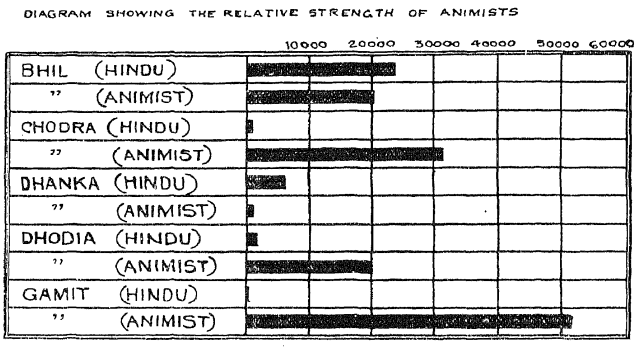
380. Strength of Forest Tribes—Among the forest tribes, the largest groups are the Gamits (375 Hindus and 51,599 Animists) Bhils (23,569 Hindus and 20,098 Animists) and Chodhras (1,315 Hindus and 31,526 Animists). The other tribes in order of strength are Dublas (mostly Hindus), Talavias, Tadvis, Vasawas, Nayakdas, etc. Dhanka is a general group name for all Bhils, but 7,610 persons (mostly Hindus) have returned this name as their tribal designation. Probably Hinduisation has the effect of obliterating tribal distinctions. The eighteen separate tribes known as forest and hill tribes are shewn in the margin.



Name of Forest and Hill Tribes
1. Bavcha
2. Bhil
Dhanka
Mavcha
Tadvi
3. Chodhra
4. Dhodia
5. Dubla
Talavia
Vasava
6. Gamit
7. Kathodia
8. Kokna
9. Kolgha
10. Kotwalia
11. Nayakda
12. Valvi
13. Varli

Mr. Dalal treated the Talavias as a criminal tribe, apparently part of the Koli race. The Talavias are however now rightly regarded as a sept of Dublas. They consider themselves a socially superior and independent sub-caste. Of the 20 sub-divisions of Dublas, these and the Vasawas have differentiated out as distinct. The Talavias are mostly Hindus: they take girls from the Saravia section of the Dublas but do not give their daughters in return. Further they only dine with the Mandvias. With the other Dublas the Talavias have nothing to do. The Tadvis were treated in 1901 as unclassifiable unit of the forest tribes. But the Tadvis, as the name implies, are a sub-caste formed by fission (*tad*). Exactly how the fission arose, the details are not so far available. Mr. Enthoven, the latest authority, regards the Tadvis as the descendants of Bhil women and Musalman men and as tracing their origin to about the time of Aurangzebe. They are half-Musalmans but in Baroda State, they were all returned as Hindus. They have a deep regard for certain Hindu deities. "They make good soldiers and constables but are poor cultivators, generally living by wood and grass cutting. To the fault of laziness, they add the vices of a quarrelsome and vindictive temper, and a great fondness for liquor." The Mavchis are another differentiated sept of the great Bhil tribe, the Hinduised section of whom—known as Bavchas—followed the Marathas into Gujarat and served as their grooms. Linguistically, it has been shewn that Bavchi and Mavchi are closely allied. Racially I have no doubt that there is a connection although the Bavchas do make some preposterous claim to being Vanias! (*Vide* Enthoven, *Tribes and Castes of Bombay*, p. 65). The Caste glossary of Mr. Govindbhai however definitely assigns the Bavchas to the Mavcha section and I have retained the Bavchas under the forest tribes, until the point of their origin and caste affinities is finally decided. Finally it has to be mentioned that tribes like Dublas, Dhodias and Bhils admit people freely (sometimes only at the cost of a feast) from other races and even from higher Hindu castes as well. Kanbis are known sometimes to affiliate themselves into the Dubla clan and the Dhodias have such sub-divisional names as Brahmanias, Vanias, Kanbias, Desais, Bhats, Prabhus and even Parsis. Dublas have among their septs Rathodias and Vohrias. Amongst the Bhil clans occur the names of Ahir, More, Pawar, Gaikwad, Shinde, etc.

381. Strength of Musalman Castes—Strictly speaking there ought not to be any caste distinctions amongst Musalmans. The broad distinction amongst Gujarat Musalmans is ethnical. The extent of the foreign strain determines the line of demarcation. This primary division through long residence in Gujarat

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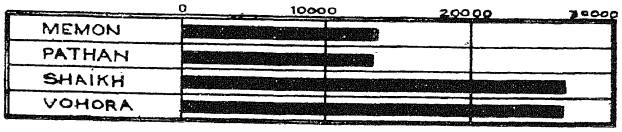
has now hardened almost into the rigidity of a caste differentiation so far as the *jus connubii* is concerned. The foreign-strain Musalmans are those that rank the highest in social rank. Already in para. 317 (in the Chapter on Language) this ethnic divide amongst Musalmans has been discussed in so far as it affected the distribution of Musalman speakers between Gujarati and Western Hindi. In the Dalal Report of 1901, the Musalmans were divided into 8 groups and 98 tribal or occupational names. The following table has been prepared on that basis with suitable modifications :—

DIAGRAM SHOWING THE RELATIVE STRENGTH OF MUSALMAN CASTES



Name of Group	Includes	Number of Caste names included	Strength
I. *Foreign Elements*	....	*12*	*56,905*
A. Arabs	Saiyad, true Shaikh and Arab (Kuraishi) ..	3	36,026
B. Afghans	Pathan, Khokhar and Afghan	3	14,165
C. Mughals	Mughal	1	1,029
D. Baloch	Baloch (Luhani, Madvani) and Makrani ..	2	1,568
E. Siddi	Siddi (Habshi)	1	265
F. Sindhi	Sindhi, Multani	2	3,940
II. *Indigenous*	....	*54*	*90,892*
A. Neo-Musalmans ..	Khoja, Memon, Vohora (peasant), Vohora (trading), Molesalam, Kasbati, Momna, Sipahi, Dhadhi, and Mirasi	10	61,648
B. Converts who have still retained Hindu caste or occupational names ..	Chhipa, Darji, Bhat, Bhoi, Khatri, Dhobi, Machhi, Sutar, Rathod, Parmar, Makwana Behlim, Gandhrap, Gola, Ghanchi, Kalal, Kumbhar, Luhar, Mali, Hajam, Bhadbhunja, Salat, Saraniya, Bandhara, Mochi, Galiara, Hijda and Bhand	28	9,943
C. Converts who have adopted new occupational names.	Bhadela, Bhathiara, Bhisti, Dudhwala, Khatki, Naghori, Nat, Pindhara, Pinjara, Poladi, Rangrej, Panjnigara, Tai and Kasai ..	14	11,471
D. Converts who are menials or labourers ..	Maleks	1	7,839
E. Unclean	Bhangi	1	1
III. *Religious Mendicants* ..	*Fakir*	*1*	*4,846*
Unspecified	....	....	*597*
Total Musalman	....	**67**	**162,238**

382. Strength of the foreign element among Musalmans—The foreign elements constitute only 35 per cent. of the Musalman total. This proportion has been calculated on the basis of the census figures for all Shaikhs. But among Shaikhs, the same tendency that gives rise to spurious accretions to the ranks of Rajputs and Vanias is also apparent. As pointed out already in the Language Chapter (para. 317), a great many aspiring converts when they rise in worldly circumstances wish to be known as either Pathans or Shaikhs. The tendency of Pinjaras to pass off as Dhunak or Pinj Pathans has already been mentioned. The Shaikh community receives accretions from miscellaneous sources. As the Persian proverb says : " First I was a Quasab (corresponding to our Kasbati), next year, I became a Shaikh ; this year, if the prices rise, I shall be a Saiyad." The last part of this proverb is perhaps a libel. The Saiyad is a jealously guarded and highly respected community with undoubted purity of lineage. "Shaikh," it is suggested by some people, is not a tribe but is a term of respect applied to venerable old men specially of high literary attainment and religious sanctity. From this point of view, Mr. Dalal actually suggested that Shaikh should be used to denote all Musalmans otherwise unclassifiable. But in the list prepared by Khan Bahadur Sadik Ali, Vazir of Khairpur, and appended to the Bombay Census Report of 1911, Shaikh is traced to Ansari, an Arabic sept name. But this traditional origin has been overlaid by accretions* through conversion and promotion from the lower orders although the foreign strain is still very evident. In para. 317, above referred to, I estimated from the point of view of language 70 per cent. of Shaikhs to be of foreign and Musalman descent, and therefore not expected to speak Gujarati. If we add to this percentage the extent of those true Shaikhs who through long

* One contributory cause of these accretions is the desire of Musalman Sectaries of the Piranapanth—known as Shaikdas and Momnas—to pass off as Shaikhs.

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domicile in Gujarat have adopted its language, the proportion of true Shaikhs may be raised to 75 per cent. The Shaikhs now number (true and spurious together) 26,902. The Pathans, another large foreign section, number 13,500. There are also 8,915 Saiyads and 3,912 Sindhis.

383. Strength of Indigenous Musalman elements—Amongst the indigenous elements, the trading Vohoras (21,064) and Memons (13,871) are the largest sections. The Vohoras have also a peasant section who form practically an endogamous group of the Hindu type. There are 9,438 Molesalams and 7,092 Momnas. The Khojas number 2.009. Amongst the converts who retain their original Hindu name, the largest group are the Ghanchis (4,070). In the occupational groups, the most important are the Pinjaras (4,473), Tais (3,109) and Bhadelas (1,532). The Pinjaras and Tais are engaged in the cotton industry as cotton cleaners and weavers. Of these two the latter caste has a foreign element in its composition.

384. Caste distribution of Hindu Aryas—Coming to the Aryas, it is significant that quite 13 per cent. of them have not signified any name of caste in the census. Of the others, the majority are Kanbis and Rajputs. There has been some active propaganda amongst the untouchable classes, as a result of which 81 Dheds and 22 Mahars have returned themselves Aryas in the census. In 1911, there were 103 Brahmans, 284 Kanbis and 33 Rajputs among the Aryas.

Caste	Number
All Aryas	*564*
Kanbis (Lewa and Kadwa)	133
Rajputs	124
Dheds and Mahars ..	103
Brahmans	73
Unspecified	86

385. Local Distribution of the main Castes : Hindu and Jain—The Brahmans number 113,825 including 73 Aryas. Of these over 34 per cent. are in Central Gujarat, 40 per cent. in North Gujarat and the rest in the other two divisions. The largest Brahman caste is the Audich. More than half of the Audichas are met with in North Gujarat particularly in Sidhpur, Vijapur, Chanasma and Harij talukas. The Anavalas (10,710) are mostly in South Gujarat. The Nagars (7,699) are largely in North Gujarat (mostly in Visnagar, Kalol and Patan talukas). A good few of the Nagar Brahmans (over 22 per cent.) are found in Central Gujarat equally divided between the City and Baroda *Prant*. The Deshastha Brahmans are mostly in the City. Modh Brahmans (8,536) are largely confined to the Northern and Central Divisions, except about a fifth found in South Gujarat (mostly in Navsari and Gandevi talukas).

Natural Division	Strength of Brahmans
State	*113,752*
Central Gujarat ..	39,061
North Gujarat ..	45,795
South Gujarat ..	16,858
Kathiawad	12,038

The Vanias (Hindu, Arya and Jain) number 78,457. The Jain Vanias are slightly more in number than Hindu Vanias. The Jain Vanias are largely found in Kadi *Prant* while the Hindu section is more evident in Central Gujarat. The main Vania Caste is the Shrimali (24,404 Jains and 4,681 Hindus). Of the Jain Shrimalis, over 63 per cent. are in North Gujarat.

Natural Division	Strength of Vanias	
	Hindu	Jain
State	*38,490*	*39,940*
Central Gujarat .	20,347	9,210
North Gujarat .	11,603	25,174
South Gujarat .	2,488	2,270
Kathiawad ..	4,052	3,286

Of the total strength of Lewa Kanbis (Hindus only) over 58 per cent. are found in Central Gujarat (mostly in the Charotar tract), over 24 per cent. in Kathiawad and 15 per cent. in North Gujarat. The Kadwas and Anjanas are mostly confined to North Gujarat. Of the other Kanbis, the Karadia Kanbis are all in Kathiawad (in Kodinar taluka). The Karadia are agriculturists of Rajput descent who are so called from having paid "kar" or taxes to government. Uda and Matia are sect-names turned into castes. Uda Kanbis are followers of Uda Bhagat. Matia Kanbis are Hindu followers of the Pirana *panth*. The Uda Kanbis number 2,375, but the sect only

Natural Division	Strength of main Kanbi Castes		
	Lewa	Kadwa	Anjana
State	*94,145*	*188,627*	*32,760*
Central Gujarat.	112,974	4,533	226
North Gujarat .	29,697	177,896	31,665
South Gujarat .	11,827	4,415	848
Kathiawad ..	39,647	1,783	21

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numbers 142. Apparently the majority have reverted to orthodox Vaishnavism or to Kabirpanth, while the old name is still continued with its distinctive peculiarities. Udas and Matias are mostly found in South Gujarat. Maratha Kanbis, the base of the Maratha race, are represented in this State by 2,431 persons mostly in Baroda City.

The Rajputs (79,178 Hindus) are almost entirely confined to Central and North Gujarat, in which divisions their strength is about equally divided. Of the Kolis (387,531), 152,034 or 39 per cent. are in Central Gujarat and 193,964 or 50 per cent. in North Gujarat. The distribution of the main castes amongst the Kolis is shewn in the margin. Like the Kanbis, the castes are strongly localised. Thakardas are almost entirely in North Gujarat. Barias are similarly concentrated in Central Gujarat. The bulk (about 68 per cent.) of Talabdas are also in this division, though 22 per cent. are in South Gujarat (mostly in Navsari taluka) and a fair sprinkling also in Kathiawad and North Gujarat.

Distribution of Main Koli Castes

Natural Division	Baria	Talabda (Dharala)	Thakarda
State	*73,9*	*72,700*	*136,065*
Central Gujarat	71,986	49,298	713
North Gujarat ..	738	2,593	131,633
South Gujarat ..	144	16,347	721
Kathiawad ..	102	4,462	1

Among the other Hindu castes, the Maratha Kshatriyas (13,323 Hindus) are mostly in the City. 1,558 Marathas are found in Baroda *Prant*, 991 in South Gujarat, 857 in Kathiawad and 403 in North Gujarat. The Brahmabhats (7,901) are almost all in North Gujarat, with the exception of a fourth found in Baroda *Prant* and the City. Of the artisan groups, the distribution of the main castes is shewn in the marginal statement. The Kathiawad *Prants* of the State contain more Sonis, Kumbhars, Darjis and Sutars per head of population than the other parts of the State. In South Gujarat, the Sonis exceed the Luhars in strength. In the other parts of the State, the latter are larger in number. The Ghanchis are practically confined to the three divisions of mainland Gujarat. In the City alone their strength (1,463) is 12 per cent. of the total. The artisan groups are mostly town dwellers.

Main Artisan Groups	Central Gujarat	North Gujarat	South Gujarat	Kathiawad	Total
Kumbhar	6,934	25,136	4,097	6,862	43,029
Sutar	5,926	12,265	2,272	1,905	22,368
Luhar	4,698	11,839	896	1,725	19,158
Darji	2,712	7,427	1,964	2,207	14,310
Ghanchi ..	2,245	7,744	2,326	6	12,321
Soni	4,135	3,779	1,561	1,432	10,907

Of the low-type labouring groups and unclean castes, the main castes are distributed according to the margin. The Dheds are fairly distributed according to the proportion of the population of each division to the total. The Bhangis are fewer proportionately in South Gujarat. The bulk of the Garodas (priests of the Antyajas) are in Baroda and Kadi *Prants*. The Chamars are also mostly to be met with in these two areas. The Vaghris are similarly practically divided between these two divisions, their numbers in the other two being insignificant. The bulk of the Ravalias are in the Kadi *Prant*.

Name of Caste	Central Gujarat	North Gujarat	South Gujarat	Kathiawad	Total
Vaghri	13,828	15,509	179	1,143	30,659
Ravalia ..	3,755	19,682	136	344	23,917
Rabari ..	6,744	40,155	341	2,634	49,874
Dhed	32,553	42,523	14,313	10,157	99,546
Bhangi	15,660	9,218	1,012	1,720	27,548
Chamar ..	10,159	22,245	1,806	934	35,147

386. Local Distribution of Forest Tribes—These tribes are divided into Hindu and Animist sections, but as the census figures regarding these sections are unreliable (*vide* Chapter IV, para. 145) they are best treated together. The Bhils (43,667), with the exception of a little over a thousand are in Central and South Gujarat, the majority being in the former division. The Talavias and Tadvis are seceding sub-castes formed from the Dubla tribe. The Tadvis (14,156) are all found in Central Gujarat (mostly in the Chorashi area); the Talavias (20,527) are found in Baroda and Navsari *Prants*—rather more in the former than in the latter. The Gamits are almost all in South Gujarat, so also are almost all the Chodhras,

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Vasawas, Dhodias and Dublas. Most of the so-called Dhankas are in Central Gujarat. The majority of the Nayakdas are in the Southern Division and the rest in the Central. The local distribution of the other tribes does not call for much remark.

387. Local Distribution of Musalmans—The largest proportion of the Shaikhs, Pathans and Saiyads is in the Central Division. The foreign elements amongst Musalmans are therefore mostly in evidence in that area. The Vohora total in the marginal table comprises the peasant and trading sections together. The peasant Vohoras (5,391) are almost entirely in Navsari *Prant* (Kamrej and Velachha talukas) while the other Vohoras (21,064) are largely in Baroda and Kadi *Prants*. In Navsari *Prant*, the trading Vohoras are almost as numerous as the peasant section. The Memons (*Muamin*, true believer) are divided into two sections—the Gujarat Memons mostly belonging to the Halai and the Kachhia Memons being found in Kathiawad (in Okhamandal, Kodinar and Amreli talukas). The Molesalams are mainly found in Central Gujarat.

Local Distribution of Musalman Castes

Name of Caste	Central Gujarat	North Gujarat	South Gujarat	Kathiawad	Total
Shaikh ..	12,216	7,803	5,558	1,277	26,854
Vohora ..	9,943	5,595	9,994	923	26,455
Memon ..	1,339	7,143	337	5,052	13,871
Pathan ..	6,153	5,175	1,354	818	13,500
Molesalam ..	8,232	966	189	51	9,438
Saiyad ..	3,750	3,302	842	1,021	8,915

388. Variation in Number of Castes and Sub-castes: Unspecified entries—In 1901 and 1911, a detailed record of castes and sub-castes and septs even of some sub-castes was compiled. In 1911, taking as separate, the sub-castes grouped under the general headings of Brahman, Vania, Kanbi and Koli, there were altogether 335 true caste names and 195 separate sept names returned. On this occasion the record of sept names has been omitted; sub-castes of Brahmans, Vanias, Kanbis and Kolis have been however recorded as heretofore. In this census, there are altogether 320 entries or 15 less than in 1911. On the other hand, the items of "unspecified" are in this census much larger as the margin shows. In 1921, 34 per mille of the people are presumably unable or unwilling to return details of their caste. In 1911, the proportion was only 9. Assuming that the census machinery was at least as efficient in this census as in the last, the figures must be taken to indicate certain tendencies on the part of the people. The large increase in "Koli unspecified" however is probably due to the deliberate desire on the part of Kolis themselves of the miscellaneous variety, like Thakardas and Talabdas, to conceal these sept names which they consider are a disgrace to them. When asked about their caste, most Kolis of these classes are content to answer "Thakor," and the enumerator is perforce obliged, where his local knowledge is not adequate, to return such entries as simply Koli. The increase of "Unspecified" entries amongst Brahmans, Vanias and Kanbis is evidence to my mind of present disintegrating tendencies, under which the memory of sub-caste divisions is apt to become fainter and fainter with individual families.

Religion or Tribe	Number of caste names recorded in	
	1921	1911
Hindu	205	212
Jain	30	35
Forest tribes ..	18	18
Musalman ..	67	70

Kind of entry	Number unspecified in	
	1921	1911
Brahman ..	5,335	1,154
Kanbi	2,901	7
Vania (Hindu and Jain).	7,800	672
Koli	39,054	17,109
Hindu	2,376	69
Jain	728	741
Animist ..	167	..
Musalman ..	9,597	9
Total ..	67,958	19,761

389. Variation in the strength of Castes—The question of variation may now be considered by groups arranged according to traditional occupations.

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This was the principle of classification in 1891, to which for various reasons it was decided to revert in 1911. Subsidiary Table I has been prepared on this basis. It will be found that there are three groups containing 200,000 persons and over; four between 100,000 and 200,000; five between 30,000 and 100,000, and 23 of other smaller groups. In the marginal statement the main groups each containing at least 30,000 are shewn with variation since 1911. The general increase in the population has been only 4·6 per cent. Compared to this mean figure, land holding and cultivating castes, the military and dominant castes, the trading groups, the Vaghris who engage in hunting, graziers and dairymen and the castes working on leather (Chamars, Mochis, etc.) show higher rates of increase.

Main groups	Proportionate strength per mille	Variation per cent. since 1911
Land holders and cultivators	265	+ 7·2
Labourers	176	— 1·4
Forest and Hill tribes ..	122	+ 4·7
Traders	63	+ 11·8
Priests and devotees ..	60	— 5·8
Weavers carders and dyers	56	— 1·2
Military and dominant ..	47	+ 14·3
Graziers and dairymen ..	30	+ 7·8
Leather workers	21	+ 7·0
Potters	21	+ 5·9
Musicians, singers, dancers, jugglers, etc. ..	15	+ 0·3
Hunters and Fowlers ..	15	+ 8·9
Others	109	+ 8·9
Total ..	1,000	+ 4·6

390. Landlords and Cultivators—The largest group is that of landlords and cultivators. Their present strength is 564,277. The castes are shewn in detail in Subsidiary Tables I and I-A. The variation in the main castes can only be dealt with here. The Koli Makwana figures are extraordinary. Their strength including Musalmans in 1911 was 2,094. It has now increased over nine-fold. The Makwanas are found nearly all in Kadi *Prant*; and the clue to this extraordinary variation is found in the decrease of the Thakardas of that *prant*. The absolute increase amongst the Makwanas is 19,612. The total decrease amongst the Thakardas is 17,184. "Thakarda" is a name of contempt proclaiming the base origin of the lower class Koli in that area. "Makwana" is a Rajput clan name, to which these Thakardas do not fail to lay some shadowy claim. The true Makwanas are degraded Rajputs who have fallen off from the status of petty *thakorates* and landlords to peasant proprietors and cultivators. But even now the title has a glamour. I ascribe therefore the whole of the increase amongst Makwana to spurious accretions from the Thakarda class. The increase amongst Kadwa Kanbis is largely due to immigration in North Gujarat. Between 1901 and 1911, that caste actually decreased by 1·6 per cent. The Lewa Kanbi is progressive. There was a drop of 14·4 per cent. in 1901, but since then the increase is continuous. The caste suffers from migration, the proportion of females is not large and the Patidar section is discountenancing widow remarriage. The increase must in some measure be put down to migration and also to doubtful additions of the individual type, mentioned already. Taking by divisions, in Baroda *Prant*, there is actually a small decrease, but in the other divisions particularly North Gujarat, the rate of increase is large. The two principal Musalman cultivating castes (Pathan and Saiyad) have declined largely in this census. The immigrant elements are increasingly leaving the State. Their economic condition generally is not good. Mortality among them has been very high; and if we take into account the factor of falsification, through which miscellaneous converts palm themselves off as either Pathans and Shaikhs, the true extent of the decline must be larger. But I do not think that factor operated much in this census, as otherwise the item of "Musalman unspecified" should not have jumped from 9 to over 9,000. In 1911, the Shaikhs and Pathans registered high rates of increase (over 40 per cent). In 1901, there was a big decline for obvious reasons. The increase in 1911 was therefore expected. But a good part of it was put down rightly by Mr. Govindbhai to falsification of returns.

Caste	Strength	Increase or decrease since 1911
Hindu		
Lewa Kanbi ..	195,183	+ 5·6
Kadwa ,, ..	188,691	+ 9·2
Anjana ,, ..	32,760	+ 5·95
Makwana Koli ..	21,706	+ 936·6
Anavala Brahman ..	10,751	+ 8·4
Musalman		
Shaikh	26,902	— 14·8
Pathan	13,500	— 17·2
Molesalam	9,438	+ 5·3
Malek	7,839	+ 4·3
Momna	7,366	— 1·3

391. Labourers (General and Agricultural)—Under this head are included the Koli population (excepting Makwana), Golas (rice-pounders), Bajanias,

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Labourers		
Caste	Strength	Variation since 1911
Hindu		
Thakarda Koli ..	136,068	— 11·2
Talabda „ ..	72,700	— 20·6
Baria	72,970	+ 10·1
Koli Unspecified ..	39,054	+ 13·0
Total Koli ..	387,531	+ 4·5

Baloch, Sipahi and other similar classes. The Golas have remained almost at the same figure as in 1911. The Balochis have declined from 951 to 658 and the Sipahis from 780 to 566. The fluctuations amongst the Kolis are shown in the marginal table. The decrease amongst the Thakardas is explained by the increase among the Makwanas. The mean increase amongst Kolis of all classes is only 4·5. The increase amongst Barias beyond that mean ratio must be put down as spurious. The "Koli Unspecified" has increased by 21,945. Analysing the variation by divisions, we find there were no "Koli Unspecified" in Baroda *Prant* in 1911, and there are now 6,994. The Talabdas are found largely in Central Gujarat and the decline amongst them must be mainly ascribed to these two causes. Of the other Kolis, the Khants have increased from 2,743 to 4,802. The Khants represent the Koli aristocracy, and it is possible that part of this increase is fictitious. The Gedia Kolis occurring only in Kathiawad have declined from 3,716 to 3,685.

392. Forest and Hill Tribes—The variation in the eighteen Bhil tribes is shewn in the margin. The Bavchas have declined by about 27 per cent. or 364 persons. The Dhankas have declined from 18,667 to 7,610, but this decline is only apparent. Dhanka as explained before (in para. 380), is a general term applied to the Bhil tribes and may be taken as a variant for "Animist or Forest tribes unspecified". The large decline on the present occasion may be therefore taken as an index of greater precision in entries.* The Dublas have declined by nearly 24 per cent. or 9,669 persons. This decline is largely explained by the fact that Talavias have increased by 10,880. Being a socially superior section the Talavias have very probably attracted spurious aspirants to their name. On the other hand, as shewn in para. 380, these tribal names are names of tribal fraternities which have, so to speak, power to add to their number. The large variation in the figures may be due also to cases of legitimate promotion or formal affiliation happening within the decade. The Tadvis have increased from only 24 to 14,156. But obviously the 1911 figures are a mistake: there were 8,435 Tadvis in 1901. In 1891, there were no Tadvis shewn separately. But the number of Bhils in that census was 59,541, and in the next census (1901) when the Tadvis were shewn separately, there was a big drop in the number of Bhils to 37,650. In 1911, when the Tadvis almost disappeared, the Bhils rose to 41,836 or by 11 per cent., proving that the inclusion or exclusion of the Tadvi section has affected the variations since 1891.

Forest Tribes	Strength	Variation per cent. since 1911
Bavcha ..	1,017	— 26·5
Bhil	43,667	+ 4·4
Chodhra ..	32,841	+ 4·7
Dhanka ..	7,610	— 59·2
Dhodia	21,341	+ 4·2
Dubla	31,307	— 23·6
Gamit	51,974	+ 4·8
Kathodia ..	372	— 28·7
Kokna	6,762	+ 4·8
Kolgha	857	+ 23·8
Kotwalia ..	1,410	— 14·9
Mavchi	479	— 51·5
Nayakda ..	8,072	— 13·6
Tadvi	14,156	+ 588·8
Talavia ..	20,527	+ 112·8
Valvi	1,473	+ 40·8
Varli	205	— 66·8
Vasawa ..	13,610	+ 24·3
Animist Unspecified ..	167	..

393. Traders—The Traders appear to have increased by nearly 12 per cent. but the Hindu section is generally stationary. The Jain Vanias show slight increase, the large decreases amongst Shrimali and Porwad Vanias—the two main Vania castes who are Jain—being explained mainly by the increase in the item "unspecified" from 15 in 1911 to 4,213 in this census. The "Vania

* In his *Tribes and Castes*, Mr. Enthoven regards Dhankas as a sub-caste of Bhils. As a matter of fact, "Dhanka" literally means tapper of toddy and is used loosely in the State as a general term for Bhils or even Forest Tribes as a whole.

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unspecified" amongst Hindus is also a large item being an increase from 657 in 1911 to 2,587 now. The reason for the large number of "unspecified" entries has been already mentioned. But even making allowance for the increasing indifference of Vanias to caste distinctions there is no doubt that all the main Vania castes are decadent—the Porwads are continuously decaying since 1891, the Shrimalis have gained only once in three censuses, while the very slight gain amongst Disawals in this census is not enough compensation for the serious decline among them in the two previous censuses. The Musalman trading communities show more progress although it must be explained that the increase amongst the trading Vohoras is not due to natural causes. The peasant Vohoras have declined by 6,467 while the traders have increased by 7,887. The net gain amongst all Vohoras is 5·7 per cent. The trading Vohoras are rather more subject to the drain of migration than the other section, and the rate of true increase amongst them must be rather less than the mean figure for the two sections taken together. But peasant Vohoras themselves who were originally converts from the agricultural classes have now taken increasingly to trade. Secondly Pinjaras or Tais who have thriven in business or trade are found sometimes to call themselves Vohoras.

Trading Castes	Strength	Variation per cent. since 1911
Hindu and Jain		
Vania (Hindu) ..	38,490	— 1·2
Vania (Jain) ..	39,940	+ 0·7
Shrimali (Jain) ..	24,404	— 9·0
,, (Hindu) .	4,681	
Porwad (Jain) ..	5,310	— 26·9
,, (Hindu) .	986	
Disawal (Hindu) .	6,167	— 3·5
,, (Jain) ..	169	
Lad (Hindu) ..	8,193	+ 0·7
,, (Jain) ..	365	
Modh (Hindu) ..	3,308	— 6·3
,, (Jain) ..	26	
Khadayata (Hindu)	3,085	+ 29·9
,, (Jain)	7	
Luhana	11,833	+ 2·1
Bhatia	972	+ 73·2
Musalman		
Vohora (Trading) .	21,064	+ 59·8
Memon	13,871	+ 2·5
Khoja	2,014	+ 2·7

394. Priests and Devotees—These include the so-called religious mendicants—Bavas, Gosains and Fakirs—and the majority of the Brahman† castes, Saiyads, Garodas (Dhed priests) and Gorjis (amongst the Jains). Brahmans of all kinds (including landlords, cultivators and traders) have increased from 113,133 in 1911 to 113,752, or by only 0·5 per cent. Altogether there were 64 separate Brahman‡ caste names recorded in 1911 and the number in 1921 is 61. The Motala, Parashar, Vanza Gor and Vayad Brahmans have dropped out of the list, while Rudhwals have reappeared. The variation in the main Brahman groups found in the State is shewn in the margin. Almost all the chief Brahman castes are decadent. The Audich Brahmans are less than their number in 1891 by 8,985 or 18·2 per cent. The Deshasthas are less by 40 per cent. The Modh Brahmans have declined by 29·6 per cent. since that date, and the Nagars by 18·9 per cent. The chief reasons are enforced widowhood, greater disinclination or inability of young men to get married, decline even in natural fertility due to enfeebled physique and the strain of living, and migration. The Bavas although celibates actually show increase since 1891, the reason probably is that the famine in 1901 must have brought a great accession to their number.

Principal Priestly Castes		
Name	Strength in 1921	Variation per cent. since 1911
Hindu		
Audich Brahman ..	40,473	— 0·5
Deshastha ,, ..	4,926	— 23·7
Mewada ,, ..	4,877	+ 1·1
Modh ,, ..	8,536	— 3·0
Nagar ,, ..	7,699	— 3·5
Bava	8,714	— 10·3
Gosain	7,014	+ 10·2
Garoda	6,570	+ 4·6
Musalman		
Fakir	4,846	+ 4·5
Saiyad	8,915	+ 1·6

395. Weavers, Carders and Dyers—Included in this group are the Dheds who form so large a proportion of the untouchable classes. A complete list of the untouchable castes occurring in the State with variation since 1911 has been already given in Chapter IV (para. 153). In this chapter, we

† Not all Brahmans are priests. Anavalas are landlords and cultivators. A section of Nagar Brahmans are writers and Government servants. Khedawal Brahmans are traders; Tapodhans and Abotis are temple servants.

‡ The traditional total of Brahman Castes is said to be 84, and a feast wherein all Brahmans are asked is called a *chorashi*. Mr. Enthoven however gives a list of 93 Gujarati Brahman caste names of which 51 did not find a place in the recent census in the State.

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Caste	Strength in 1921	Variation per cent. since 1921
Dhed	99,627	— 0·2
Bhavsar	5,677	— 0·2
Pinjara (Musalman)..	4,473	— 17·3
Khatri (Hindu and Musalman) ..	3,272	— 11·5
Tai (Musalman) ..	3,109	+ 9·5

shall only take up the main castes and consider them under their traditional occupations. Weaving is the traditional occupation of only one of the sections—Vankar—of this caste. The other two sections are Hadias (bonemen) and Meghwans (rainmen). The other principal castes under this head of weaving and dyeing of cloth are Bhavsars (calenderers and dyers), Pinjaras (cotton carders), Khatris (Hindu weavers) and Tasi (Musalman weavers). The variations in these castes are noted in the margin. The decline of Pinjaras is due partly to their tendency to pass themselves off either as Vohoras or Pathans.

396. Military and Dominant—Coming to the next numerically important group, the military and dominant classes are mainly composed of Rajputs, Marathas, Vaghers and Kathis. The Rajputs show a very large increase. There was a smaller increase in 1911, and a big decline in 1901. Since 1891, this caste has actually decreased by nearly 19 per cent. The increase in this census is in a great measure fictitious, because it is in evidence mainly in Central Gujarat where the Kolis are keenest on the Rajput name. In North Gujarat the increase is only about 5·8 per cent., and this rate seems to be a truer indication of the real increase that has happened. The Kathis and Vaghers have largely decreased through natural causes. The decline amongst Marathas is largely due to emigration. The advance in education which this caste has attained has developed enterprise and favoured migration to Bombay City and other places. The reduction of the State army effectives has also contributed to this decline.

Caste	Strength in 1921	Variation per cent. since 1911
Rajput	79,178	+ 23·5
Maratha ..	13,423	— 9·2
Vagher	3,718	— 13·1
Kathi	2,917	— 16·0

397. Graziers and Dairymen—The principal castes comprised under this head are Rabari, Ahir and Bharwad. All these castes show increases—11,4·5 and 0·2 per cent. respectively. Ahirs are presumably the representatives of the ancient Abhiras, and as a race name enters into the composition of many occupational castes like Sonis, Sutars, Shimpis, etc. In this State they are mainly confined to Amreli *Prant*.

398. Leather-workers, Sweepers, Village-watchmen and Menials—These groups comprise most of the untouchable castes except Dheds mentioned above. The principal castes are Chamars (25,147), Bhangis (27,549), Shenvas (6,072) and Mochis (9,047). The large decrease amongst Shenvas has occurred only in North Gujarat.

Caste	Variation per cent. since 1911
Bhangi	+ 4·4
Chamar ..	+ 9·1
Mochi	+ 1·9
Shenva ..	— 20·0

399. The Artisan groups: Goldsmiths, blacksmiths, potters, carpenters, etc.—The marginal statement shows as in other cases the variation in the strength of the principal artisan castes since 1911. Most of the principal castes show increases. But all these castes have declined since 1891. The general decline of hand-crafts through the competition of machinery added to the gradual spread of large scale industries of the joint-stock type has affected the individual artisan very hardly indeed. This depression has led to emigration. Sutars and Luhars have made their way as far as Africa to try their fortune.

Principal Artisan Castes		
Castes	Strength in 1921	Variation since 1911
Kumbhar ..	43,769	+ 3·2
Sutar	22,562	+ 8·0
Luhar	19,172	— 0·3
Ghanchi ..	16,408	+ 4·0
Darji	14,321	+ 7·5
Soni	10,933	+ 8·0
Kansara ..	1,890	— 8·4

Another cause affecting the variations is the formation of combination-castes, Kadia-Kumbhars—potters who have changed over to the work of bricklaying (masons) from the making of earthenware, Kumbhar-Sutars—potters who have taken to carpentry, and Sutar-Luhars—blacksmiths who have taken to the Sutar's occupation. The increase amongst Sutar-Luhars has been at the expense of the

Combination Castes	Strength in	
	1911	1921
Kadia-Kumbhar ..	45	1,762
Kumbhar-Sutar ..	1,328	1,334
Sutar-Luhar ..	72	506

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Luhar community. The Kadia-Kumbhars have had a large accession to their number in Amreli *Prant*.

400. Bards and Genealogists—The Brahmabhats (7,901) have been regarded in this census as a separate caste taken out of the general class of Bahrots or Bhats. In 1911, there were 13,345 Brahmabhats. There is thus a large decrease (40·8 per cent.), but it is possible that instructions to count them as separate were not properly understood in all places, and in many places they were returned as Bhats. The total of Bhats and Brahmabhats in this census amounts to 13,882 as against 14,656 in 1911. There is thus a decrease of a little over 5 per cent., which may be taken to be the true rate of variation for Brahmabhats.

The Charan is the only other caste included in this class. According to one accepted derivation of the name, Charan means a grazier. The other derivation that traces the word to *char*, to spread, would make the Charans out to be bards and genealogists. Mr. Enthoven after a due consideration of the evidence of the traditions concludes that Charans were generally graziers. The present-day Charans are so different from the courtly chanters of Rajput tradition, that one would imagine these to have been wrongly classed with them from similarity of sound. But there is in reality Mr. Enthoven thinks, no essential difference in racial origin between the rough cattle-guarding charan and the Rajput Chief's bard and reciter for whose handsome appearance Colonel Tod had so much admiration. Both classes belong to the four main divisions of Gujars, Kachchhelas, Marus and Tumers. The present special appearance of the Rajput Charan is due to the well-nourished life of courts and palaces. But the Charan's great passport to the favour of Rajput Kings was his unflinching capacity for martyrdom. This devotion led the Charans to put up a claim that they were inspired. "When it was well-established, the Charans found that the belief that they were god-possessed opened to them several well-paid forms of employment: begging, since the people prized their blessing and dreaded their curse; caravan guiding leading to caravan owning and the Charan's close alliance if not identification, with the Vanjaras; and debt-insuring, opening an escape from the narrow path of self-sacrifice to the highway of snug common-place money-lending."*

401. Musicians, Singers, Dancers, Mimes, etc.—The Ravalias (23,918) and Targalas (4,211) are the two principal castes in this connection. Targalas have an arguable claim to Brahman origin and their specialisation as actors on the Gujarati stage gives them opportunities for cultivation of a literary accent which is not materially different from their Brahman congeners. The Ravalias on the other hand are a much more depressed class. Their occupation as drummers is the only reason why they are grouped with Targalas. The Ravalias have increased by 6·4 per cent. since the last census. The Targalas however have declined by 5·8 per cent. Most Targalas with any possibilities on the stage go out to Bombay, Ahmedabad or even to Calcutta. In Kadi *Prant*, their home, they have little chance for their talents.

402. Miscellaneous groups: Hunters, fishermen and boatmen, barbers and washermen—The Vagharis are the typical hunters and fowlers. They have increased by 9 per cent. in this census. The Dhobis (2,644) have remained stationary. Barbers (Hajams) have increased from 25,787 (24,838 Hindus and 949 Musalmans) to 26,355. The Dhimar is the Deccani section of the Machhi caste. A Dhimar as Mr. Marten pointed out "follows several occupations. Traditionally a fisherman he performs all occupations connected with water; he is therefore boatman, water-nut and melon grower, and water bearer, in the last capacity being brought to domestic service where he will clean pots and utensils and carry palkis and litters."† The two sections of the fishermen—Gujarati and Deccani—are often confused in the census record. In 1901, there were no Dhimars recorded, but there were 8,055 Machhis. In 1911, there were 5,410 Dhimars and 2,621 Machhis. In 1921, on the other hand Machhis numbered 7,299, and Dhimars declined to 2,040.

* *Vide* his *Tribes and Castes*, pp. 272-275.
† *Vide* Central Provinces Report of 1911, p. 222.

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The total of fishermen in the three censuses is indicated in the margin and is correct. I am inclined to take the census figures of 1921 for Dhimars and Machhis separately to be correcter than those of 1911. The Deccani section of the fishermen caste is found only in Navsari *Prant*. In 1911, 2,354 Dhimars were shewn against Baroda *Prant*, which cannot be. All these are Gujarati Machhis. I would therefore reduce the 1911 Dhimar total by this figure. The number of Dhimars in 1911 must have been therefore 3,056. By this means, the true variation in this caste—which is 63 per cent. according to census figures,—is reduced to 33 per cent. The census figures of 1921 show that Dhimars are almost all in Navsari *Prant*.

Census year	Strength of fishermen	Variation per cent. from census to census
1901 ..	8,035	..
1911 ..	8,031	— 0·3
1921 ..	9,339	+ 16·3

403. New caste-entries—Of the old caste-entries of 1911 most have reappeared. Some minor Brahman caste names have disappeared, probably swallowed up in the "Unspecified" total. Lastly it is one of the minor tragedies of this census that the Pomlas who numbered 44 in 1911, and about whose so-called *couvade* so much was written in the last Report, no longer figure in the Caste Table.

Of the new entries, the appearance of Brahmabhat is due only to change in classification. Kanipavnaths (53) were temporary immigrants recorded on the census date in Kadi *Prant*, but who have now left the State. From enquiries it appears that they were Hindustani strolling magicians and fortune tellers. They professed to be Hindus. I have not been able to find out any details about this caste from either the United Provinces or Punjab Reports. Certain Jesalmeri "Bhatias" in Kadi *Prant* (in Patan taluka) have declared themselves to be a separate division quite different from the Bombay Bhatias who are supposed to belong to Cutch. They practise infant marriage and like the Kadwa Kanbis have a marriage season once every 12 years. They deal in grain.

404. Europeans and Anglo-Indians—There remain the Europeans and Anglo-Indians. In 1911, the Europeans and allied races numbered 241 of whom 123 were British subjects and 36 belonged to foreign nationalities. In 1921, their strength was only 103. The European population consists mostly of officers and missionaries and their number is fairly known. . The census figures of 1911 are unduly in excess of the truth. In 1921, the census recorded 77 Portuguese who on enquiry were found to be Indian natives of Goa who were Portuguese subjects. These were classified as Indians. In 1911, possibly the European total was swollen with these entries. Further there must have been in 1911 rather more than in 1921, spurious accretions of Anglo-Indians of mixed birth. Such entries as French, Dutch, etc., on the part of people who are obviously of mixed birth were found in this census and must have occurred ten years ago also. No adjustments were made at the compilation stage, as the figures were too small to need any correction. But the tendency is notorious in India although it has been now mitigated by the change of name from Eurasian to Anglo-Indian. Well-wishers of Anglo-Indians have often deprecated the tendency of successful members of this community, especially those who approach the European in colour and accent—the "albino crows" as Col. Gidney in a recent speech called them rather unkindly—to wish to dissociate themselves from their brethren and to affect the society of European circles. I have tried with the aid of a friend to estimate the number of true Europeans and Americans residing in the State. I do not think that their strength can be put at much higher than 70 either at this census or in 1911. The Anglo-Indians have declined from 82 to 44. One contributory cause of this decline is that Goans (66) have all been treated as Indians. Perhaps some Goans were included under Anglo-Indians through mistake. The Anglo-Indian total is liable to be vitiated by two factors : at the upper end, there are, as pointed out above, socially successful persons wishing to call themselves Europeans and at the bottom are the miscellaneous riff--raff of converts—Feringis *et hoc genus omne*—who palm themselves off as Anglo-Indians. On this occasion, strict instructions were issued to return all such persons—Feringis and such like—as Indian Christians.

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405. Present day disintegrating tendencies—In para. 530 of Mr. Govindbhai's Report, an excellent account is given—to which the reader may turn—of the disintegrating influences of modern education, travel and standards of life on the rigid restrictions of caste. Caste restrictions regarding food and pollution by touch are fast breaking down. Railway travelling or promiscuous herding on boats and steamers on the way to Dwarka and other places has brought all classes of Hindus (even untouchables) together under circumstances which make it impossible for caste to continue at least on its old basis of mutual exclusiveness and rigid social intolerance. A change in the attitude of the higher classes towards the unclean castes is coming into existence, as pointed out already, but it has not been rapid enough in the view of the reformers, nor has it been commensurate with the much more cleanly habits of life which the Dheds and Garodas amongst the untouchables are now adopting. But the change is bound to come. The restrictions of commensality within the different sub-divisions of a caste, or even between caste and caste, are fast breaking down in cities and towns. Wherever the population is tending to become "delocalised" there the fear of caste opinion is getting less and less, and the restrictions of caste are beginning to sit more and more lightly on the average Hindu. The increase in the item of "Unspecified" amongst Brahmans, Vanias and Kanbis, has beeen already quoted as statistical support for the belief that the hold of caste on the Hindu is perceptibly weakening.

406. Caste-pride—As shewn under Religion, the greater the disintegration, the more vocal is the sentiment. Within the castes themselves, there is a good deal of "caste-patriotism" and much talk of reform and caste conferences. As instances of caste pride, the tendencies amongst Brahmabhats, Khambhars, Modh Champaneris, Khants, Barias, Talavias, Pinjaras, etc., have been already dealt with in this chapter. This caste-pride either takes shape in some claim to Vania, Rajput or even Brahman affinities, or in the adoption of a new name. Along with this caste-pride, there naturally goes the tendency to resent the contemptuous terms which the other castes have invented and applied to the more unfortunate of their brethren. The Tapodhans and Vyas Brahmans now-a-days resent the term "degraded" applied to them. The Tapodhans do not deny the charge of appropriating the offerings to Siva, but they maintain that the use of such offering (*Sivanirmalya*) is the way to salvation. They object to being called "Bharda." The Vyasa Brahmans who similarly object to be Vyasdas refer apologetically to their custom of remarriage of widows but declare that they are high caste Brahmans and have nothing to do with Targalas and Bhavaiyas. The Anavalas dispute the version of their origin given in the Caste-glossary and resent being called Bhathelas. The tendency to change the name of the caste is also apparent. The cases of Kalals calling themselves Shaundiya Agnikula Kshatriyas, of Deccani Sonars wishing to be known as Daivadnya Brahmans and even of the humble Dhed calling himself Mayavanshi Rajput are instances in point. It is part of a widespread tendency not confined to Hinduism merely but spread all over the world. The same motive is apparent in the plain "Smiths" spelling "Smythe," in the Negroes calling themselves Afro-Americans and in the persons of mixed birth in India wishing to change their name from Eurasian to Anglo-Indian.

407. Tendencies towards fission due to caste pride and other causes—The result of these tendencies is more fission. Even where motives of social ascendancy are not at work, the Hindu is consumed with a passion for infinite sub-divisions. Changes of domicile or of language or occupation are sufficient reasons for forming sub-divisions. Change of status amongst the Lewa Kanbis has given rise to the Patidar class. As in Calcutta, where persons returned from a visit to Europe or America form more or less an endogamous class, so also "England-returned" Nagars are beginning to form a "Vilayati" section of their own. Caste disputes are also a potent cause of these fissions. Visa Lad Vanias of Dabhoi, owing to a quarrel, are prohibited by their leaders from intermarrying with those of Baroda. Race and locality have entered largely into the composition of the great occupational groups of the artisans like Sonis and Sutars. Frequently intercourse with some lower caste has brought about divisions. The Audich Brahmans originally with two sub-divisions have now multiplied their septs, according as the needy sections of them act as priests of the lower orders. There are now Koli gors, Khatri gors, Luhar gors, Mochi gors, etc., among them. Mr. Enthoven would include even the Vanza gors among the Audichas. Purity of lineage is another contributory to the multiplication of these divisions. Visa

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Dasa, Pancha and even Adhich* among Vanias and also some Brahman castes like Sachoras and Bhargavas, correspond to the octeroons, quadroons and mulattoes of the American classification. These terms—twenties, tens, fives, etc.—are the proportions of pure blood—presumably Aryan—that is traditionally said to be found in the composition of these castes. A definite mixed breed (*Varnasankara*), is often recognised as seen in the "Barad" sections of Nagars, Audichas and of Kanbis. The existence of Pancholi sections amongst Sutars is another example of the recognition of mixed blood. Change of traditional occupation is also operative as a powerful factor, and in future is likely to be a very fruitful source of division.

408. Tendencies towards union: Fusion by marriage: Prohibition of drink—These fissiparous tendencies on the one side are fast leading to their inevitable conclusion. The conception of caste is being gradually narrowed down to that of family, while in origin it must have been a development of the family into the clan, or race or even nation. On the other hand there are numerous instances of a growing desire for consolidation. The restricting of the area of choice for marriage has led to social consequences of disparate marriages or even of immorality, which have attained the dimensions of a serious problem with many castes. A great deal of the work of caste conferences which are familiar to the reader of newspapers is concerned with the lowering of the cost of marriage, and the softening of the rigours of caste in regard to choice of brides. These rigours are particularly serious with the higher orders. In the chapter on Civil Condition, it was shewn that widow remarriage had become a social necessity with some castes. Now-a-days there is much talk, in as much as commensal restrictions are being fast loosened, of enlarging the area of connubium so as to make it co-extensive with at least the formal limits of commensality. Breaches of connubium are now increasingly overlooked especially in those castes where there is a deficiency of brides. In castes which do not practise *Kulinism*, the tendency to fuse sub-castes is on the increase. One census committee (from Kalol) reports that intermarriages have occasionally happened between Dasa Shrimali, Visa Disawal and Dasa Umad sections of the Vania community. From Damnagar, it is even reported that intermarriages have taken place between Lewa and Kadwa Kanbis. Amongst the Kapols of Dhari it is stated that intermarriages have taken place between their two sections—Dhodhari and Delawadi. From Petlad it is stated that Visa Lad Vanias have started allowing their caste people to take brides from sections with whom they can dine. Amongst the Brahman castes, gradually these tendencies towards extension of connubiality are increasing and are being winked at by the caste authorities. The Modh Chovisa Brahmans (it is reported from Sinor) have taken to seeking their brides from other sections. The chief obstacle to the further spread of these tendencies is the selfishness of the leading (*Kulin*) families within the castes whose special monopoly of the bride-groom price is disturbed thereby. Everywhere there is a general desire to reduce expenses of marriage and caste feasts. *Ekdas* (agreements) frequently take place with a view to level down social distinctions and to break down the monopoly of the *Kulins*.

Along with these tendencies there goes the desire to raise the social tone of the caste, by discarding harmful social habits like drink. The Patanwadia Kolis of Sinor have solemnly resolved to give up thieving and criminal propensities generally. The sea-coast Kolis of Navsari *Prant*, who are fairly well-circumstanced, have resolved to prohibit drink within their caste. The Khatris have resolved not only to penalise by fines any person who drinks amongst them but to make a public example of him by parading the delinquent through the streets. The Dheds and Bhangis at various places have also similarly resolved to prohibit drink. The Golas of the City and Padra taluka have effectively banished drink from their midst.

409. Caste and the Nationality—idea.—These conflicting tendencies show that even though at any given moment caste may appear to be stationary, it is not so inexorable to change, as its seeming rigidity and its apparent injustice would lead one to expect. The formation of sub-castes—and the ease with which they formed—are an indication of the dynamical tendencies operating on this ancient institution. The sub-castes particularly in the occupa-

* In the Baroda State, "Adhich" or 2½ section is not known except amongst Dabgars who call themselves Adhia Vanias. Mr. Enthoven however mentions Adhich as a definite principle of division.

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tional groups are very unstable. The common interests which the needs of the occupation create and enforce certainly make for union. In this State, the occupational groups form the largest proportion of Hindu castes. The tribal and racial castes only form 35 per cent. of the total. Function is so strong a welding factor that sections dissimilar in their ethnic origin or domicile have tended to unite under its influence. The fissiparous tendencies also in a way help, though it may seem a paradox, in the movement towards unity. Caste influence is disorganised and weakened through this process. And there is no stronger obstacle to the nationality principle than caste unity. The nationality idea in Western Europe was developed not a little by the delocalisation of individuals through the breakdown of craftguilds. It may be that these forces in India also will throw the individual back on himself and his own resources. Castes has hitherto served as a most effective defensive weapon to the Indian, whose social will and collective capacity for action has been weakened and rendered inert through centuries. It is remarkable that these fissaparous tendencies are most evident in groups wherein function has ceased to weigh as a factor of any importance like the Brahmans, Vanias, Kanbis, etc. Occupational castes on the other hand like artisan groups, etc., show greater tendencies towards consolidation. In the former case, intellectualist tendencies are speeding towards the nationality idea. In the latter the unity of occupation is a sufficient warrant for bringing together dissimilar units within a group. Old territorial names like Sorathia, Parajia, Maru, Mewada, Konkani, Limachia, Vadnagara, Dishawal, Deshastha, etc., are giving place under the impress of modern ideas, surely and inevitably to broader and wider designations, like Gujarati, Deccani, Hindustani, etc. Everywhere, the changes are in the direction of harmonisation of differences. Untouchability, if it still takes hard to die, will surely disappear as soon as the Antyajas (untouchables) themselves take to cleanly living. It has been pointed out that this " don't-touchistic " phase of caste is the result of the idea of spirit emanation so common to all early societies.* I would not go so far as to suggest that this idea of spirit community or magic is at the root of caste. But certainly the virulent separatist aspects of caste are the gift of Animism, along with its hideous gods, to Hindu society. With the movement towards a purer and more spiritual conception of Hinduism, there is little doubt that these alien excrescences will be shed.

It is not true to say that the Hindu political synthesis has never been familiar with the principle of nationality even in germ. In this Report we cannot however enter into this controversy; but it will suffice to state that religious movements associated with the Aryan Brahman tended to divide and sub-divide, while the religions of Kshatriyas like the Jaina and the Bauddha faiths tended to unite and consolidate. In the Chapter on Language, reference was made to the Aryan Kshatriyas of the Outer Band who were consecrated to empire-states and to the Rishikuls of the Madhyadeśa who were wedded to little kingdoms. With the definite subjugation of Jainism and the extermination of the Buddha's faith, caste was re-enthroned on the basis of Brahmanical ascendancy. Through centuries, it was worked out into its present elaborate net work with the ingenuity of the Brahman intellect. It enveloped the average life of the individual. It supplied his every need. It resisted the intrusion of the foreigner by setting up such a complete organisation of an *imperium in imperio* that it made the alien's presence bearable for centuries and rendered any nationality movement unnecessary. It sought instruments from every quarter, not disdaining ideas from even the rude aborigines, to reinforce its sanctions. It absorbed every principle that divided. It adapted itself to all environments. But when with the British connection, Western education was introduced into this country, it met its most formidable opponent. Its bases have been now undermined. The new influences not only have restored nationality but have also invested it with the democratic principle, which was foreign to the spirit of caste government. Whether in the future, in an era of new opportunities, caste will adapt itself to these conditions and be content to remain as it were, the " election agent " of the new democracy, it remains to be seen. But it may also be that caste, which has adapted so many ideas to its service, will absorb the nationality idea as well.

* *Vide* R. N. Gilchrist's *Indian Nationality*, p. 119.

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SUBSIDIARY TABLE I.—Castes classified according to their Traditional Occupations

No. of Group	Group and Caste	Strength
I	*Landholders and cultivators*	564,277
		*265**
	Brahman-Anavala	10,751
	Kachhia	7,454
	Kanbi Anjana	32,760
	,, Kadwa	188,691
	,, Karadia	7,112
	,, Lewa	195,183
	Kasbati	1,483
	Malek	7,830
	Molesalam	9,438
	Momna	7,366
	Pathan	13,500
	Sathawara	5,771
	Shaikh	26,902
	Sindhi	3,912
	Vohora (peasants)	5,391
	Others	40,744
II	*Military and Dominant*	100,484
		47
	Maratha	13,426
	Rajput	79,308
	Vagher	3,718
	Kathi	2,917
	Others	1,115
III	*Labourers (including agricultural)*	374,990
		176
	Gola (rice-pounders)	5,223
	Koli Baria	72,980
	,, Chunvalia	7,628
	,, Patanvadia	24,074
	,, Talbada	72,700
	,, Thakarda	136,068
	,, Unspecified	39,054
	Others	17,263
IV	*Forest and Hill Tribes*	258,447
		122
	Bhil	43,667
	Chodhra	32,841
	Dhanka	7,610
	Dhodia	21,341
	Gamit	51,974
	Kokna	6,762
	Nayakda	8,672
	Vasava	13,610
	Dabla	31,307
	Talavia	19,020
	Others	21,643
V	*Graziers and Dairymen*	64,078
		30
	Ahir	5,413
	Bharwad	8,507
	Rabari	49,874
	Others	284
VI	*Fishermen, boatmen and Palki bearers*	14,746
		7
	Bhoi	3,875
	Dhimar	2,040
	Machhi	7,299
	Bhadela	1,532
VII	*Hunters and fowlers*	30,659
		15
	Vaghari	30,659
VIII	*Priests and Devotees*	126,894
		60
	Bava	8,714
	Brahman Audich	40,475
	,, Deshastha	4,933
	,, Mewada	4,877
	,, Modh	8,536
	Brahman Nagar	7,713
	Fakir	4,846
	Garoda	6,570
	Gosain	7,014
	Saiyad	8,915
	Others	24,301
IX	*Temple servants*	5,509
		3
	Brahman Tapodhan	5,039
	Others	470
X	*Genealogists, Bards and Astrologers*	15,864
		8
	Brahmabhat	7,901
	Barot	5,981
	Others	1,982
XI	*Writers*	3,580
		2
	Prabhu	2,285
	Brahmakshatri	775
	Kayastha	520
XII	*Musicians, Singers, Dancers, Mimes, Jugglers and Drummers*	32,540
		15
	Ravalia	23,918
	Targala	4,211
	Others	4,411
XIII	*Traders and Pedlars*	133,729
		62
	Luhana	11,833
	Memon	13,871
	Vania Disawal	6,358
	,, Lad	8,558
	,, Porwad	6,296
	,, Shrimali	29,085
	Vohora (Traders)	21,064
	Others	36,664
XIV	*Carriers by pack animals*	579
		0
XV	*Barbers*	26,355
		12
	Hajam	25,569
	Others	786
XVI	*Washermen*	2,644
		1
XVII	*Weavers, Carders and Dyers*	118,549
		56
	Bhavsar	5,677
	Dhed	99,627
	Pinjara	4,473
	Others	8,772
XVIII	*Tailors*	14,327
		7
	Darji	14,321
	Others	6
XIX	*Carpenters*	24,488
		12
	Sutar	22,562
	Others	1,926
XX	*Masons*	2,945
		1
XXI	*Potters and Bricklayers*	44,885
		21
	Kumbhar	43,769
	Others	1,116
XXII	*Glass and lac workers*	151
		0
XXIII	*Blacksmiths*	19,172
		9
	Luhar	19,172

* The number below the total strength of each group indicates the proportion per mille to the total population.

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SUBSIDIARY TABLE I.—Castes classified according to their Traditional Occupations

No. of Group	Group and Caste	Strength
XXIV	*Goldsmiths and silversmiths* ..	11,520
		5
	Soni	10,933
	Others	587
XXV	*Brass and Coppersmiths*	1,895
		1
XXVI	*Confectioners and grain parchers* ..	631
		0
XXVII	*Oil pressers*	16,429
		8
	Ghanchi	16,408
	Others	21
XXVIII	*Toddy drawers and distillers (Kalals and Bhandaris)*	1,697
		1
XXIX	*Butchers*	257
		0
XXX	*Leather workers*	45,419
		21
	Chamar	35,147
	Mochi	9,047
	Others	1,225
XXXI	*Basket and net makers*	212
		0
XXXII	*Earth, salt, etc., workers and quarriers*	3,736
		2
XXXIII	*Domestic servants*	270
		0
XXXIV	*Village watchmen and menials* ..	6,982
		3
	Shenva	6,072
	Others	910
XXXV	*Sweepers*	27,549
		13
	Bhangi	27,549
XXXVI	*Others*	30,033
		14
	Christians	7,421
	Parsis	7,530
	Others	15,082

SUBSIDIARY TABLE I—A.

Number of Group	List of Castes included under "Others".
I	Brahman—Borsada, Dadhich, Kapil, Karhada, Napal, Sachora, Sajodra, Unevval; Kanbi—Barad, Kokani, Maratha, Maru, Matia, Uda; Koli—Makwana; Lodh; Mali; Tamboli; Thakor (Pardeshi); Khokhar; Mughal; Parmar; Poladi.
II	Jat; Behlim; Multani and Arab.
III	Bajania; Gola (Khavas); Koli-Baria; Gedia; Khant; Lonia; Mahor; Pasi; Baloch; Pindhara and *Sipahi*.
IV	Bavcha; Kolgha; Kotwalia; Mavchi; Tadvi; Kathodia; Talavia; Valvi; Varli.
V	Dhangar and Gadaria.
VI	....
VII	Vaghari.
VIII	Brahman—Bardai, Bhargava, Chovisa, Deshaval, Devrukha, Gauda, Gayaval, Girnara, Golak Gomtival, Gugali, Jambu, Jharola, Kandolia, Kanyakubja, Kayatia, Khadayata, Maithil, Nandora, Palival, Pushkarna, Rajgor, Raval, Rayakwal, Rodhwal, Sanadhya, Saraswat, Sarvaria, Setpal, Shrigod, Shrimali, Sompura, Talajia, Tailangu, Udambar, Valam, Vidur, Yajurvedi; Gorji; Brahman-Koknastha, Shenvi, Shravan.
IX	Aboti Brahman.
X	Musalman Bhat and Hindu Charan.
XI	....
XII	Bharthari; Brahman Vadadra; Gandhrap; Ghadsi; Gondhali; Gurav; Holar; Nat; Turi; Vadi; Bhand; Dhadi; Mir and Siddi.
XIII	Bhatia; Brahman-Khedaval; Brahman-Vyas; Vania-Agarval, Baj, Gujjar, Jharola, Kapol, Khadayata, Lingayat, Mewada, Modh, Nagar, Nandora, Nema, Oswal, Sorathia, Umad, Vayada, Rayakwal; Afghan; Dudhwala; Khoja; Bhojak (Hindu and Jain).
XIV	Thelari and Vanjara.
XV	Hajam Turki.
XVI	Dhobi.
XVII	Bandhara; Chhipa; Galiara; Khatri; Komti; Mahar; Salvi; Vanza; Rangrej and Tai.
XVIII	Shimpi.
XIX	Kharadi; Kumbhar —Sutaria; Sutarluhar.
XX	Kadia-Kumbhar and Salat.
XXI	Koli Dalwadi.
XXII	Kasar.
XXIII	....
XXIV	Dhuldhoya and Sonar.
XXV	Kansara and Otara.
XXVI	Bhadbhunja and Bhathiara.
XXVII	Teli.
XXVIII	Kalals and Bhandaris.
XXIX	Kasai.
XXX	Dabgar and Khatki.
XXXI	Burud, Mang and Vansfoda.
XXXII	Kharva and Ode.
XXXIII	Brahman Sorathia; Gauli; Pakhali and Bhisti.
XXXIV	Makrani.
XXXV	....
XXXVI	Hijda; Kamalia; Kanipavnath; Nair; Sagar; Sarania; Naghori; Panjnigara; Rathod.

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SUBSIDIARY TABLE II.—Variation in Caste, Tribe, etc., since 1891

Caste, Tribe or Race	Persons				Percentage of Variation Increase (+) Decrease (—)			Net Variation 1891-1921	
	1921	1911	1901	1891	1911 to 1921	1901 to 1911	1891 to 1901	Net	Percentage
1	2	3	4	5	6	7	8	9	10
Hindus, etc. ..									
Ahir	5,413	5,182	4,316	5,214	+ 4·46	+ 20·07	— 17·22	+ 199	+ 3·82
Hindu	5,370	5,181	4,316	5,214	..	..	..	..	..
,, (Arya) ..	43	1	..	..	..	..	..	..	..
Bava	8,714	9,718	9,425	7,570	— 10·33	+ 3·11	+ 24·55	+ 1,144	+ 15·11
Bhangi	27,548	26,397	24,011	30,965	+ 4·36	+ 9·93	— 22·44	— 3,417	— 11·04
Hindu	27,548	26,397	23,978	30,965	..	..	..	..	..
Jain	..	..	33	..	..	..	..	..	..
Bharwad	8,507	8,489	7,077	9,589	+ ·22	+ 19·95	— 26·19	— 1,082	— 11·28
Bhavsar	5,677	5,689	7,378	9,083	— ·21	— 22·89	— 18·77	— 3,406	— 37·50
Hindu	4,705	4,581	6,066	7,750	..	..	..	..	..
Jain	965	1,105	1,312	1,333	..	..	..	..	..
Hindu (Arya) ..	7	3	..	..	..	..	..	..	..
Bhil	43,667	41,836	37,650	59,541	+ 4·38	+ 11·12	— 36·76	— 15,874	— 26·66
Hindu	23,569	24,755	..	38,920	..	..	..	..	..
Animist	20,098	17,081	37,650	20,621	..	..	..	..	..
Bhoi	3,875	4,079	4,127	4,531	— 5·001	— 1·16	— 8·91	— 656	— 14·48
Brahman Anavala ..	10,751	9,916	10,862	11,148	+ 8·42	— 8·71	— 2·56	— 397	— 3·56
,, Hindu ..	10,710	9,893	10,862	11,148	..	..	..	..	..
,, (Arya)	41	23	..	..	..	..	..	..	..
,, Audich ..	40,475	40,679	41,497	49,460	— ·501	— 1·97	— 16·1	— 8,985	— 18·16
Hindu ..	40,473	40,628	41,497	49,460	..	..	..	..	..
,, (Arya)	2	51	..	..	..	..	..	..	..
,, Deshastha ..	4,933	6,464	5,694	8,273	— 23·69	+ 13·62	— 31·17	— 3,340	— 40·37
Hindu ..	4,926	6,460	5,694	8,273	..	..	..	..	..
,, (Arya)	7	4	..	..	..	..	..	..	..
,, Modh	8,536	8,800	9,578	12,129	— 3·00	— 8·12	— 21·03	— 3,593	— 29·62
Hindu ..	8,536	8,795	9,578	12,129	..	..	..	..	..
,, (Arya)	..	5	..	..	..	..	..	..	..
,, Nagar	7,713	7,990	8,144	9,505	— 3·47	— 8·12	— 21·03	— 1,792	— 18·85
Hindu ..	7,699	7,987	8,144	9,505	..	..	..	..	..
,, (Arya)	14	3	..	..	..	..	..	..	..
,, Tapodhan ..	5,039	4,465	4,740	5,451	+ 12·86	— 5·80	— 13·04	— 412	— 7·56
Chamar	35,147	32,210	29,746	37,717	+ 9·12	+ 8·29	— 21·13	— 2,570	— 6·81
Chodhra	32,841	31,366	23,324	29,496	+ 4·73	+ 34·48	— 20·92	+ 3,345	+ 11·34
Hindu	1,315	11,709	..	26,646	..	..	..	..	..
Animist	31,526	19,657	23,324	2,850	..	..	..	..	..
Darji	14,318	13,277	14,023	16,308	+ 7·54	— 5·32	— 14·01	— 1,990	— 12·20
Hindu	14,310	13,261	14,015	16,308	..	..	..	..	..
Jain	5	12	8	..	..	..	..	..	..
Hindu (Arya) ..	3	4	..	..	..	..	..	..	..
Dhanka	7,610	18,667	5,524	27,999	— 59·23	+ 237·93	— 80·27	— 20,389	— 72·82
Hindu	6,289	2,033	..	27,840	..	..	..	..	..
Animist	1,321	16,634	5,524	159	..	..	..	..	..
Dhed	99,627	99,708	94,388	124,324	— ·17	+ 5·73	— 24·08	— 24,697	— 19·86
Hindu	99,546	99,727	94,376	124,324	..	..	..	..	..
Jain	..	..	12	..	..	..	..	..	..
Hindu (Arya) ..	81	71	..	..	..	..	..	..	..
Dhimar	2,040	5,410	..	..	— 62·29	..	..	..	..
Dhodia	21,341	20,490	15,861	15,961	+ 4·15	+ 29·18	— ·63	+ 5,380	+ 33·71
Hindu	1,512	5,492	..	15,951	..	..	..	..	..
,, (Arya) ..	..	3	..	..	..	..	..	..	..
Animist	19,829	14,995	15,861	10	..	..	..	..	..
Dubla	31,307	40,976	28,492	32,185	— 23·60	+ 43·82	— 11·48	— 878	— 2·73
Hindu	23,250	37,577	..	32,170	..	..	..	..	..
Animist	8,057	3,399	28,492	15	..	..	..	..	..
Gamit	51,974	49,615	38,169	41,615	+ 4·75	+ 29·98	— 8·28	+ 10,359	+ 24·89
Hindu	375	27,440	..	38,237	..	..	..	..	..
Animist	51,599	22,175	38,169	3,378	..	..	..	..	..
Garoda	6,570	6,281	5,919	7,453	+ 4·60	+ 6·12	— 20·58	— 883	— 11·85
Hindu	6,570	6,277	5,919	7,453	..	..	..	..	..
,, (Arya) ..	..	4	..	..	..	..	..	..	..
Ghanchi	12,338	11,867	12,211	14,052	+ 3·97	— 2·82	— 13·11	— 1,714	— 12·19
Hindu	12,321	11,862	12,182	14,043	..	..	..	..	..
Jain	17	..	..	..	..	..	..	..	..
Hindu (Arya) ..	..	5	29	9	..	..	..	..	..
Gola (Rice pounders) ..	5,223	5,210	5,660	5,984	+ ·25	— 7·95	— 5·41	— 761	— 12·72
Gosain	7,014	6,363	5,672	10,221	+ 10·23	— 12·18	— 44·9	— 3,207	— 31·38
Hajam	25,569	24,838	24,878	31,557	+ 2·94	— ·16	— 21·17	— 5,988	— 18·97
Hindu	25,560	24,832	24,856	31,557	..	..	..	..	..
Jain	9	6	22	..	..	..	..	..	..

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SUBSIDIARY TABLE II.—VARIATION IN CASTE, TRIBE, ETC., SINCE 1891—(*continued*)

Caste, Tribe or Race	Persons				Percentage of Variation Increase (+) Decrease (—)			Net Variation 1891-1921	
	1921	1911	1901	1891	1911 to 1921	1901 to 1911	1891 to 1901	Net	Percentage
1	2	3	4	5	6	7	8	9	10
Hindus etc.—*contd.*									
Kachhia	7,434	8,029	8,192	8,912	— 7·41	— 1·99	— 8·08	— 1,478	— 16·58
Hindu	7,430	8,027	8,190	8,912	..	..	..	..	..
Jain	4	2	2	..	..	..	..	..	..
Kanbi-Anjana	32,760	30,920	32,532	31,488	+ 5·95	— 4·95	+ 3·31	+ 1,272	+ 4·03
Hindu	32,760	30,918	32,514	31,488	..	..	..	..	..
Jain	..	2	18	..	..	..	..	..	..
Kanbi-Kadwa	188,691	172,856	175,664	200,058	+ 9·16	— 1·59	— 12·19	— 11,367	— 5·68
Hindu	188,627	172,641	175,570	200,058	..	..	..	..	..
Jain	13	121	94	..	..	..	..	..	..
Hindu (Arya) ..	51	94	..	..	..	..	..	..	..
Kanbi-Karadia	7,112	5,974	6,456	..	+ 19·04	— 7·47	..	..	..
Kanbi-Lewa	195,183	184,810	171,223	199,917	+ 5·61	+ 7·93	— 14·35	— 4,734	— 2·37
Hindu	194,145	183,289	170,390	199,169	..	..	..	..	..
Jain	956	1,333	825	748	..	..	..	..	..
Hindu (Arya) ..	82	188	8	..	..	..	..	..	..
Kokna	6,762	6,451	3,646	5,613	+ 4·82	+ 76·94	— 35·04	+ 1,149	+ 20·47
Hindu	893	1,906	..	5,590	..	..	..	..	..
Animist	5,869	4,545	3,646	23	..	..	..	..	..
Koli	387,541	370,953	324,554	471,762	+ 4·47	+ 14·29	— 31·20	— 84,221	— 17·85
Hindu	387,531	370,943	324,527	471,762	..	..	..	..	..
Jain	..	7	27	..	..	..	..	..	..
Hindu (Arya) ..	10	3	..	..	..	..	..	..	..
Kumbhar	43,029	41,693	41,395	49,860	+ 3·20	+ ·72	— 16·98	— 6,831	— 13·70
Hindu	43,029	41,692	41,375	49,853	..	..	..	..	..
Jain	..	..	20	7	..	..	..	..	..
Hindu (Arya) ..	...	1	..	..	..	..	..	..	..
Luhana	11,833	11,588	10,461	11,099	+ 2·11	+ 10·77	— 5·75	+ 734	+ 6·61
Hindu	11,830	11,561	10,447	11,099	..	..	..	..	..
Jain	..	..	8	..	..	..	..	..	..
Hindu (Arya) ..	3	27	6	..	..	..	..	..	..
Luhar	19,160	19,212	19,052	24,186	— ·27	+ ·84	— 21·23	— 5,026	— 20·78
Hindu	19,158	19,208	19,045	24,186	..	..	..	..	..
Jain	2	4	7	..	..	..	..	..	..
Machhi (H.M.)	7,299	2,621	8,055	9,696	+ 178·48	— 67·46	— 16·92	— 2 397	— 24·72
Maratha	13,426	14,785	17,392	19,943	— 9·19	— 14·99	— 12·79	— 6,517	— 32·67
Hindu	13,423	14,782	17,386	19,943	..	..	..	..	..
Jain	1	2	6	..	..	..	..	..	..
Hindu (Arya) ..	2	1	..	..	..	..	..	..	..
Mochi	8,882	8,715	8,593	9,599	+ 1·91	+ 1·42	— 10·48	— 717	— 7·47
Nayakda	8,672	10,030	6,970	8,616	— 13·56	+ 43·90	— 19·10	+ 56	+ ·64
Hindu	1,269	3,634	..	6,454	..	..	..	..	..
Animist	7,403	6,396	6,970	2,162	..	..	..	..	..
Rabari	49,874	44,916	39,593	58,087	+ 11·03	+ 13·45	— 31·84	— 8,213	— 14·14
Rajput	79,308	64,228	59,414	97,713	+ 23·47	+ 8·10	— 39·18	— 18,405	— 18·83
Hindu	79,178	64,202	59,410	97,713	..	..	..	..	..
Jain	6	3	4	..	..	..	..	..	..
Hindu (Arya) ..	124	23	..	..	..	..	..	..	..
Ravalia	23,918	22,484	19,672	28,785	+ 6·37	+ 14·29	— 31·66	— 4,867	— 16·90
Hindu	23,917	22,482	19,672	28,785	..	..	..	..	..
Jain	1	2	..	..	..	..	..	..	..
Satlawara	5,771	5,830	5,362	6,606	— 1·01	+ 8·73	— 18·83	— 835	— 12·64
Shenva	6,072	7,587	5,209	7,587	— 19·96	+ 45·65	— 31·34	— 1,515	— 19·97
Soni	10,933	10,120	11,098	12,267	+ 8·02	— 8·81	— 9·53	— 1,314	— 10·87
Hindu	10,907	10,112	11,080	12,251	..	..	..	..	..
Jain	14	3	18	16	..	..	..	..	..
Hindu (Arya) ..	12	5	..	..	..	..	..	..	..
Sutar	22,368	20,719	22,585	25,312	+ 7·95	— 8·26	— 10·77	— 2,944	— 11·63
Hindu	22,368	20,719	22,554	25,312	..	..	..	..	..
Jain	..	..	31	..	..	..	..	..	..
Tadvi	14,156	24	8,435	..	+58883·3	— 99·74	..	..	..
Talavia	20,527	9,647	12,551	16,700	+ 112·78	— 23·14	— 24·85	+ 3,827	+ 22·91
Hindu	19,020	8,919	12,551	16,699	..	..	..	..	..
Animist	1,507	728	..	1	..	..	..	..	..
Targala	4,211	4,468	4,367	4,747	— 5·75	— 2·31	— 8·006	— 536	— 11·29
Vaghari	30,659	28,129	23,264	34,442	+ 8·99	+ 20·91	— 32·45	— 3,783	— 10·98
Vagher	3,718	4,277	4,306	4,349	— 13·06	— ·67	— ·99	— 631	— 14·51
Vania Disawal	6,358	6,145	7,461	10,014	+ 3·46	— 17·64	— 25·49	— 3,656	— 36·51
Hindu	6,167	5,817	7,290	9,903	..	..	..	..	..
Jain	169	325	171	111	..	..	..	..	..
Hindu (Arya) ..	22	3	..	..	..	..	..	..	..

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SUBSIDIARY TABLE II.—VARIATION IN CASTE, TRIBE, ETC., SINCE 1891—(*continued*)

Caste, Tribe or Race	Persons				Percentage of Variation Increase (+) Decrease (—)			Net Variation 1891-1921	
	1921	1911	1901	1891	1911 to 1921	1901 to 1911	1891 to 1901	Net	Percentage
1	2	3	4	5	6	7	8	9	10
Hindus etc.—*contd*									
Vania-Lad	8,558	8,500	8,556	8,974	+ ·68	— ·66	— 4·66	— 416	— 4·64
Hindu	8,193	8,096	8,381	8,943	..	..	..	..	..
Jain	365	404	175	31	..	..	..	..	..
Vania Porwad	6,296	8,613	9,500	11,920	— 26·90	— 9·34	— 20·30	— 5,624	— 47·18
Hindu	986	1,680	1,640	1,685	..	..	..	..	..
Jain	5,310	6,933	7,860	10,235	..	..	..	..	..
Vania Shrimali	29,085	31,965	27,415	32,879	— 9·01	+ 16·59	— 16·62	— 3,794	— 11·54
Hindu	4,681	5,044	4,123	4,767	..	..	..	..	..
Jain	24,404	26,913	23,292	28,112	..	..	..	..	..
Hindu (Arya) ..	..	8	..	..	..	..	..	..	..
Vasava	13,610	10,951	2,383	..	+ 24·28	+ 359·55	..	..	..
Hindu	2,237	4,257	..	..	..	..	..	..	..
Animist	11,373	6,694	2,383	..	..	..	..	..	..
Musalmans									
Fakir	4,846	4,639	4,725	7,089	+ 4·46	— 1·82	— 33·35	— 2,243	— 31·64
Ghanchi	4,070	4,614	3,989	5,117	— 11·79	+ 15·67	— 22·04	— 1,047	— 20·46
Kasbati	1,483	6,323	..	..	— 76·54	..	..	..	..
Malek	7,839	7,519	8,988	12,079	+ 4·25	— 16·34	— 25·59	— 4,240	— 35·10
Memon	13,871	13,540	7,607	6,621	+ 2·45	+ 78·01	+ 14·89	+ 7,250	+ 109·50
Molesalam	9,438	8,966	9,778	16,072	+ 5·26	— 8·31	— 34·16	— 6,634	— 41·28
Momna	7,092	7,183	12,153	13,854	— 1·26	— 40·89	— 12·28	— 6,762	— 48·81
Pathan	13,500	16,307	11,402	17,976	— 17·21	+ 43·02	— 36·37	— 4,476	— 24·89
Pinjara	4,473	5,408	4,217	5,499	— 17·28	+ 28·24	— 23·31	— 1,026	— 18·66
Saiyad	8,915	8,772	7,295	9,326	+ 1·63	+ 20·25	— 21·67	— 411	— 4·41
Shaikh	26,854	31,510	22,416	29,324	— 14·77	+ 40·57	— 23·55	— 2,470	— 8·42
Vohora	26,455	25,035	25,372	26,078	+ 5·67	— 1·33	— 2·71	+ 377	+ 1·45
Christians	7,421	7,203	7,691	646	+ 3·03	— 6·35	+ 1090·56	+ 6,775	+ 1048·76
Parsis	7,530	7,955	8,409	8,206	— 5·34	— 4·21	+ 2·47	— 676	— 8·23

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CHAPTER XII

OCCUPATION

STATISTICAL DATA

Subject	TABLES	
	Imperial	State
OCCUPATION		
Occupation or Means of livelihood	XVII	....
Subsidiary Occupations of Agriculturists	XVIII	....
Dual Occupations	XIX	....
Occupations by Religion	XX	..
Occupations of selected Castes, Tribes and Races	XXI	....
Occupation in selected towns	....	XXIV
Literates in English by Occupation	....	XIII
Immigrants from selected areas by Age and Occupation to City of Baroda	....	XXV
Census of Livestock	....	XXVI,XXVII
INDUSTRIES		
Industrial Statistics	XXII	....
Statistics of Cottage and Rural Industries by talukas	....	XXIX

Introductory Remarks

410. Reference to Statistics—Statistics regarding the occupations of the people are contained in Imperial Tables XVII-XXI. Imperial Table XVII is a general statement showing the number of persons supported by each occupation classified in the Scheme, as well as the total of actual workers and number of persons supported secondarily by agriculture, in each administrative division of the State and the City of Baroda. Imperial Table XVIII contains under three heads of rent receivers, rent payers and agricultural labourers, the subsidiary occupations of agriculturists, according as they are Government employès, money lenders, grain dealers, weavers or persons engaged on other trades or industries, clerks, school teachers, estate agents or managers, medical practitioners or artisans. The remainder of subsidiary occupations is grouped together in the last column. Imperial table XIX shows certain dual occupations which obtain in this State, such as guarding of cattle and blanket weaving, grain dealing and lending of money, fishing and plying of boats, cattle breeding and dairying etc. Imperial Table XX gives the religious distribution of persons supported by each occupation. In this table, actual workers are not shewn separately. In Imperial Table XXI, the same castes as were selected for education (Imperial Table IX) and age and civil condition (Imperial Table XIV) are again taken and the occupational distribution of their actual workers is studied. It shows first the extent to which the traditional occupation with which a particular caste is associated is followed in that caste. The actual workers in the other classes of occupation are then shewn therein. In the State Tables Volume, Table XXIV enables the reader to see the contrast between urban and rural areas in occupation. Table XIII of that volume gives further interesting details of occupations of persons who are literate in English. Table XXV gives the chief occupations of immigrants to the City. The agricultural wealth of the State is studied in Tables XXVI and XXVII which give the statistical results of the recent cattle census that was undertaken along with the general census.

There were also enquiries in various directions, which will be explained at their proper places in respect of the industrial situation. As in 1911, a census of industrial establishments, but of a more detailed and searching character, was taken. Imperial Table XXII contains the results of this enquiry. The corresponding table of the last census contained only four

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parts. On this occasion, the information compiled is detailed in seven parts. Part I of this table gives the State Summary per kind of industrial establishment employing at least 10 persons, showing details for those using power and also for those which do not. Part II gives the distribution of these establishments by each division and the City of Baroda. Part III gives the type of organisation (*i.e.*, whether the industry is run by State agencies, companies or private ownership). This table also shows the caste or race of owners and managers. Part IV gives the details of caste or race and birth place of skilled workmen. Part V gives similar details for the unskilled. Part VI gives the details of power employed in these factories. Part VII shows the number of looms in use in textile establishments. In State Table XXIX, particulars regarding the cottage and rural industries obtaining in the State (except the City of Baroda) are shewn. About the time of the preliminary record, every supervisor was provided with a questionnaire in which he was required to fill in for his circle details of certain specified cottage industries such as hand-looms, spinning wheels, tanneries, fisheries, etc. These particulars were received and scrutinised, after which the above table was compiled. In the body of this chapter, a large amount of statistical information, not comprised in the above tables, will be embodied. The Director of Commerce has very kindly cooperated with me by letting me have his special staff who went to certain selected towns (including the City of Baroda) and there collected data regarding persons engaged in the main cottage industries. A summary of his figures will be given at its proper context.

411. Subsidiary Tables—The above mass of statistical detail is formidable enough in all conscience, and to enable the reader to digest all this information, a large number of subsidiary tables is required. In the margin a list of these is given and also the principal tables from which they are prepared. Besides these, Subsidiary Table X gives details of persons employed in Postal, Railway and Irrigation Departments. In this chapter there will be also given other tables showing proportional figures prepared from State Table XIII and XXIV and other information regarding value of land, agricultural indebtedness, income, cost of living, etc., compiled from sources too numerous to mention.

Subsidiary Tables		From which principal table prepared
Number	Name	
I	General Distribution by occupation	Imperial Table XVII.
II	Distribution by occupation in Natural Divisions.	,,
III	Distribution of the Agricultural, Industrial, Commercial and Professional population.	,,
IV	Occupations combined with agriculture where agriculture is the subsidiary occupation.	,,
V	Occupations combined with agriculture where Agriculture is the principal occupation.	Imperial Table XVIII.
VI	Occupations of Females	Imperial Table XVII.
VII	Selected Occupations (variation of 3 censuses).	,, and corresponding Tables of 1911 and 1901.
VIII	Occupations of Selected Castes ..	Imperial Table XXI.
IX	Distribution of 10,000 persons by Occupation and Religion.	Imperial Table XX.
XI	Industrial Census—Distribution of Industries and persons employed	Imperial Table XXII, Part I.
XII	Particulars of establishments employing 20 or more persons in 1911 and 1921.	Imperial Table XXII, Part I, and corresponding Table of 1911.
XIII	Organisation of Establishments ..	Imperial Table XXII — part III.
XIV	Place of Origin of skilled workmen.	,, part IV.
XV	Do. of unskilled	,, part V.
XVI	Proportional Distribution of adult women and children of each sex in different industries.	,, part I.
XVII	Distribution of Power	,, part VI.

412. Nature of the Question Asked—The information asked for regarding the occupations of the people was to be entered in columns 9, 10 and 11 of the Schedule. In 1891 the information required was only found in one column headed "Occupation" or means of subsistence. Since 1901, particulars regarding workers and dependents as well as of subsidiary occupations are also included. Column 9 shows the principal occupation of the individual. Column 10 gives particulars of the subsidiary occupation, and column 11 is reserved for dependents. The instructions to the enumerators were as follow :—

Column 9 (*Principal occupationof actual workers*).—Enter the principal means of livelihood of all persons who actually do work or carry on business, whether personally or by means of servants, or who live on *house-rent, pension,* etc. Enter the exact occupation and avoid vague

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terms such as "service" or "writing" or "labour." For example in the case of labour, say whether in the fields, or in a stone quarry, or dyeing factory, or cotton mill or glass factory, or earth work, etc. If a person makes the articles he sells, he should be entered as "maker and seller of them." Women and children who work at any occupation which helps to augment the family income must be entered in column 9 under that occupation and not in column 11. Column 9 will be blank for dependants. The following terms are herewith prescribed for recording agricultural occupations :—

(1) Receivers of profits of inam villages.	Inamdars.
(2) Receivers of rent on house property.	House rent receivers (*Ghar bhadu lenārā*).
(3) Receivers of rent on agricultural lands.	Agricultural rent receivers (*sānth lenārā*).
4) Cultivators who own their lands.	Cultivating land owners (*Jate kheti karnara*)
(5) Cultivators who are tenants of landlords.	Cultivating tenants (*Ganotia*).
(6) Cultivators in Inam villages.	*Inami gamna kheduto.*
(7) Growers of Special Products, Gardeners, etc.	Growers of spices, or whatever it may be (by name).
(8) Agricultural labourers ordinary.	Agricultural labourers (*Kheti na majuro*)
(9) Indentured labourers.	Agricultural labourer followed by whatever local term applies (*Hali*, or *dhaniamane tyān chakar*).
(10) Income from Vatan property.	*Watani vahivat upar nirvah karnar.*

It must be noted that persons who own their own land and cultivate it by means of servants as opposed to tenants come under (4) above. The distinction between rent receivers (*i.e.*, 1, 2, 3 and 10) and rent payers (4, 5 and 6) is comprehended in the above scheme. In addition, classes 8 and 9 represent the landless element of wage earning labour. Class No. 7 may be either rent paying or rent receiving. In regard to persons who may be said to belong to more than one of the classes, the principal one should be entered in column 9 and the subsidiary one in column 10.

Column 10 (*Subsidiary occupation of actual workers*).—Enter here any occupation which actual workers pursue at any time of the year in addition to their principal occupation. Thus if a person lives principally by his earnings as a boatman, but partly also by fishing, the word "boatman" will be entered in column 9 and "fishing" in column 10. If an actual worker has no additional occupation, the column will be left blank. This column will be blank for dependants.

Column 11 (*Means of subsistence of dependents*).—For children and women and old or infirm persons who do not work either personally or by means of servants, enter the *principal occupation* of the person who supports them. This column will be blank for actual workers.

413. Instructions to Superior Census Staff—To avoid frequent references to headquarters these instructions were further amplified and made more precise in the Manual for Supervisors as follows :—

(*l*) The entry of occupations in columns 9 to 11 of the schedule is another matter requiring special care. Only those women and children will be shewn as workers who help to augment the family income. A woman who looks after her house and cooks the food is not a worker but a dependent. But a woman who collects and sells fire-wood or cow-dung is thereby adding to the family income, and should be shewn as a worker. So also a woman who regularly assists her husband in his work (*e.g.*, the wife of a potter who fetches the clay from which he makes his pots), but not one who merely renders a little occasional help. A boy who sometimes looks after his father's cattle is a dependent, but one who is a regular cowherd should be recorded as such in column 9. Boys at school or college should be entered as dependents. Dependents on a joint family, the members of which follow different avocations, should be entered in column 11 under the occupation of the principal working member. Domestic servants must be entered as cook, *bhisti*, etc., in column 9, and not in column 11 as dependents on their master's occupation. Persons temporarily out of employ should be shown as following their previous occupation.

(*m*) Where a man has more occupations than one, the principal one is that on which he relies mainly for his support and from which he gets the major part of his income. A subsidiary occupation should be entered if followed at any time of the year. *Only one subsidiary occupation* (*the most important one*) *should be entered in column* 10 ; this must be impressed upon the enumerators.

(*n*) In column 9 do not use general or indefinite terms such as "service", "shopkeeping," "writing," "labour," etc. Find out and state the exact kind of service, the goods sold, the class of writing or labour.

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If a man says his occupation is "service" distinguish—

(1) Government service, (2) railway service, (3) municipal service, (4) village service, (5) service in a shop or office, and (6) domestic service, stating his rank and the nature of his work.

In the case of domestic service state precisely the kind of service rendered, *e.g.*, cook, water-carrier, *khidmatgar*, etc.

Show pensioners as military or civil, as the case may be.

Show persons who live on the rent of lands on buildings in towns separately from persons who derive their income from agricultural land.

In the case of labourers, distinguish agricultural labourers, earth workers, labourers in mines, and operatives in mills, etc., stating the kind of mill or factory such as cotton mills, ginning factories, etc.

In the case of clerks, show the occupation of the clerk's employer (*e.g.*, lawyer's clerk).

In the case of traders specify carefully the kind of trade (*e.g.*, grain dealer).

In the case of large manufactures show the proprietor as a manufacturer, and specify the branch of manufacture, as cotton manufacturer, etc. For minor industries, state precisely the nature of the work done, for example, whether a weaver weaves cotton, silk, carpets, etc.

In addition to these instructions the most common types of errors were collected and circulated to all enumerators and supervisors for their guidance.

414. Accuracy of the return : errors of record—In spite of the express injunction against ambiguous or vague terms the mistakes of record were again evident. During the inspection of the preliminary record, a great many of these errors were eliminated. But even then the vague entries of *majuri* (labourer), *dukandar* (shopkeeper), *kheti* (cultivation), *karigar* (artisan) found place in the enumeration books. Further, the peculiar circumstances of caste oftentimes led to the entry of the traditional occupation in the column for principal occupation, although as often happened, the traditional occupation had ceased to be the chief source of income. The distinction between principal and subsidiary was not always understood. The average enumerator did not bother over-much about the test of income, nor did he stop to explain about it. On the whole, therefore, the record of subsidiary occupations is far from complete and can be taken as only roughly true. The column regarding dependents frequently showed that the instructions regarding it were not understood. Instead of recording the principal occupation of the earner by whom the dependent is supported, only vague terms such as "dependent" were entered. Frequently in the case of females, although it was laid down that mere household work which did not augment the family income was not to be regarded as an occupation, such was entered against their names. These mistakes were as far as possible corrected at the slip-copying stage in the Central Abstraction Office.

Apart from these more or less inexcusable errors, there were others more unavoidable, *e.g.*, where it was uncertain whether a maker of an article was also its seller, whether a grazier was also a breeder of cattle, whether a cultivator was a rent-payer or a rent receiver and so on. Even in Europe, on the requirements of which the classification of occupations favoured in the Indian Census has been chiefly based, the economic process of division of labour has not yet sufficiently advanced as to differentiate always between the maker of a commodity and its seller. The uncertainty therefore about these differentiations is excusable in this country and continues much the same from census to census.

Apart from these mistakes the fact that the return of occupations is true of—or is presumed to refer to—the state of things on a single day has some bearing on the relative value of the statistics. The census date fell on the 18th March. About this time agricultural operations are nearing their end ; the landless labourer, it is well-known, changes his occupation with the season. It is probable that a portion of these who if the census date were earlier would have been returned as agri-

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cultural labourers were engaged in other pursuits. Thus the occupational return may unduly depress the principal industry of the State and fail to represent accurately the normal life of the people. As a result of this depression, it is possible that such occupation as transport may show an undue increase ; the onset of summer which begins to be severe at this date may mean an unusual briskness among minor industries of ice, ærated water manufacture and trade.

415. Errors of Compilation—Apart from these wrong entries or limitations of the return, there is the inevitable possibility of incurring mistakes, in the course of tabulation, when thousands of different entries have to be reduced to the standard classification of four classes, twelve sub-classes, 56 orders and 191 groups. There was the danger of different interpretations for the same entry, but as we had in connection with our State Census only one Tabulation Office, this was reduced to a minimum. A classified list of occupations and an index both in Gujarati and English of occupational entries and the groups to which they can be assigned were prepared for the use of sorters and compilers. By means of constant supervision, a uniformity of procedure was attained. Besides by the time the sorting stage for the occupation tables was reached, the sorting staff were made already familiar with the general nature of the occupational classification by having to sort the literates in English according to occupation and age. This preliminary experience stood them in very good stead when the more elaborate work was later taken in hand. Each total for a district before it was finally passed was further compared with the previous census total, and where there were discrepancies, the sorters had to re-examine the tabulation processes and even to have recourse to the original schedules. Several important errors were thus detected and rectified.

Generally it may be concluded that with added experience and familiarity the compilation of the occupation table is no longer such a formidable task as it appeared at first sight. The change in classification, introduced since 1911, which has made it simpler and more logical has eased the task considerably of Compilation Offices. But it must be remembered that a general census, as Sir Robert Giffen once gave his opinion, is not the right machinery for conducting a detailed inquest into the industrial organisation of a country. What is really available through such means is a rough and ready return showing broadly the man-power available at any given moment in any particular industry or trade. The figures for the broad divisions or classes, sub-classes and most of the orders may therefore be accepted as correct, but the return of groups must be regarded with considerable reserve.

416. Scope of the Chapter—As it was remarked in the Census Report of England and Wales for 1891, " The most that it is reasonable to expect from data so collected (*i.e.*, at a census) is that they shall give the means of drawing such a picture of the occupational distribution of the people as shall be fairly true in its main lines, though little value can be attached to the detailed features. It is not wise to demand from a material a result for the production of which it is unsuited." It is for this reason therefore that in the United States, any industrial survey of a scientific nature is obtained through the agency of a specially conducted enquiry spread over a large period, and seldom through the means of a synchronous census.

It is in view of the limitations of the enquiry and the deficiencies of the material that, as explained by the Census Commissioner's Note, the wide scope that was originally intended for this Chapter has been narrowed down to the discussion of the " personnel and man power of the various occupations and industries, and except in so far as new and useful information can be imported, our efforts should be confined within these limits." Subject to these limitations, the discussion on industries, the labour problem and economic condition generally will deal with these questions in so far as they bear on the demography of the State.

417. Changesi nthe classification since 1901—At the last census, Sir Edward Gait carefully revised the occupation scheme onthe basis of M. Bertillon's classification. The classifications of 1891 and 1901 censuses were complicated in the extreme. It divided all occupations into seven main classes. Subsidiary to these were 24 orders, which were further sub-divided into 79 sub-orders and 520

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groups. Its extreme elaboration exposed the work of compilers to serious risk of error. The following statement shows the main features of the two schemes:

Sir J. A. Baine's Scheme: 1891 and 1901.			Bertillon Scheme adopted and revised: 1911, 1921.		
Symbol	Class	Sub-Class	Symbol	Class	Sub-Class
A	Government	I. Administration II. Defence. III. Foreign and Feudatory Service.	A	Production of raw materials.	I. Agriculture and Pasture. II. Extraction of minerals.
B	Pasture and Agriculture.	IV. Cattle breeding, etc. V. Agriculture.	B	Preparation and supply of material substances.	III. Industry. IV. Transport. V. Trade.
C	Personal services	VI. Personal services.	C	Public Administration and liberal arts.	VI. Public Force. VII Public Administration. VIII. Professions and liberal arts.
D	Preparation and supply of material substances.	VII. Food and drink. VIII. Light, Firing and Forage. IX. Buildings. X. Vehicles and Vessels. XI. Supplementary requirements. XII. Textile Fabrics and dress. XIII. Metals and precious stones. XIV. Glass, pottery and stone-ware. XV. Wood, cane and leaves. XVI. Drugs, gums, etc. XVII. Leather.	D	Miscellaneous	IX. Persons living on their own income. X. Domestic service. XI. Insufficiently described occupations. XII. Unproductive.
E	Commerce, Transport and Storage.	XVIII Commerce. XIX. Transport and Storage.			
F	Professions.	XX. Learned and artistic professions. XXI. Sports and amusements.			
G	Indefinite Occupations and means of subsistence independent of occupation.	XXII. General labour. XXIII. Indefinite or disreputable occupations. XXIV. Independent of work.			

The classification into classes and sub-classes has been retained almost unchanged in the present census. Apart from the elaborateness of the old scheme of 1901 there were several defects in it which made a change in 1911 imperative. As Mr. Morgan Webb pointed out in the Burma Report of 1911: "Traders dealing in specified articles were included in Class D,—preparation and supply of material substances, while traders unspecified were entered in Class E—Commerce, Transport and Storage. Again miners of specified minerals were included under Class D, whereas miners of unspecified substances were entered in Class G. It is impossible to devise a scheme of occupational classification free from some anomalies of this nature, but those just instanced were capable of modification." A scheme was therefore required which was simpler, more logical and more elastic. Besides, it was essential that Indian statistics should be brought in line with the international classification, and Bertillon's Scheme was being generally adopted in European countries and in the United States.

418. Changes in the classification since 1911—The Scheme adopted in 1911 holds good generally in the main details for this census also. The four classes and twelve sub-classes continue unchanged.* The number of orders is now 56 instead of 55 in the last census; room has been found for two new orders, Transport by Air (19) and Air Force (43) by combining old orders 18 and 19 into one with a new name "Other miscellaneous and undefined Industries," and also by amalgamating old orders 40 and 41 and calling the new order 40 simply "Trade of other sorts." A new order, 56, has been opened under sub-class "Unproductive,"

* Class D now includes Sub-class IX—Persons living on their income—which in 1911 formed part of Class C.

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with the title, "Other unclassified non-productive Industries." The groups have been expanded from 169 to 191. The principal alterations in respect of the groups are—

"(*i*) the expansion of the existing groups, so as to show in detail interesting or important categories which were previously combined, and (*ii*) the correction of imperfect classification by redrafting the groups or transferring certain categories from one group to another."

As to the first type of changes, those with which this State is chiefly concerned are detailed below. In Order 1, farm servants are isolated from field labourers. In Order 6 (Textiles) groups have been expanded to show separately workers in certain important operations like cotton sizing from cotton weaving, weaving of woollen blankets and woollen carpets from wool carding and spinning and silk weaving from silk spinning. In Order 8, sawyers are separated from carpenters, turners and joiners. In Order 11, manufacturers of mineral oils are separated out from those that are concerned in the production of vegetable oil. In Order 15, stone cutters and dressers are shewn separate from brick-layers and masons. In Order 18, contractors for the disposal of refuse matter are differentiated from mere sweepers and scavengers. In Orders 16, 21 and 37, the workers in mechanical transport are separated from other transport workers. In Orders 20, 21, 22 and 49, an endeavour has been made to isolate the unskilled workers from the skilled. New groups have been added also :—*e.g.*, makers of glass bangles (53), general store keepers (152), etc. The last named has been long thought of as a necessity, as the variety of general stores corresponding to what is known as the *manohari dukan* is fast springing up as a feature of the rural economy.

The other changes are conceived with a view to improve the classification. Persons connected with journalism—Editors and Journalists—have been taken out of old Order 18 (Industries of luxury) and included under new Order 50 (Letters, Sciences and Arts) in Group 177. Acrobats, conjurers, fortune-tellers, reciters, etc. have been similarly taken out of old Order 41 (Trade of other sorts) because they are not well classified under Trade, and brought under Order 50 as a separate group (No. 179). Finally under the sub-class "Unproductive" the order of Beggars, Vagrants, etc., have been expanded into three groups. There was a public demand for information about the strength of beggars and vagrants. On the other hand it was also thought desirable to give separate figures for procurers and prostitutes.

419. Principles underlying the classification—The more important principles that have governed the present classification of occupations may be of interest to the reader. The following is a *resumé* of the Census Commissioner's note on the subject :—

(*i*) Where a person both makes and sells, he is classed as a *maker*. On the same principle when a person extracts some substance, such as saltpetre, sulphur, etc., he is classed under Sub-class II—Exploitation of minerals and not in Sub-class III—Industry.

(*ii*) Industrial and trading occupations are divided (*a*) according to the material worked in, and (*b*) according to the use which it serves. Generally the first category is reserved for such articles, the use of which is not finally determined. But it also includes specified articles for which there is no appropriate head in the second category. For example, while shoe-makers are included in the second category (Order 13, group 78), the makers of water-bags, saddlery and the like are put in the first (Order 7, group 40).

(*iii*) Persons employed in Railway carriage-factories have been shewn in Order 22 (Transport by Rail) instead of under Order 16 (Construction of means of transport) because these factories are directly worked by Railways in this country. The manufacture and repair of railway trucks is an integral

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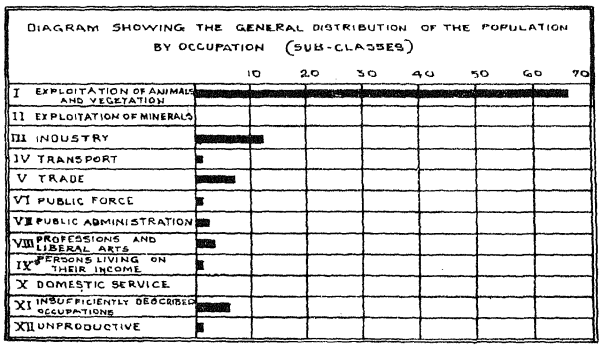
part of the operations of the Railway authorities. Railway police and Railway doctors however are treated as professional men, although they receive their pay from the Railway.

(*iv*) Generally the principle is laid down that wherever a man's personal occupation which involves some special training, *e.g.*, doctor or engineer, he is classed under the head reserved for that occupation. Wherever the work in which he is engaged involves further specialisation, the group is again sub-divided. Thus a marine engineer is differentiated from a river surveyor. Only such officers of government as are not professional persons like doctors, teachers, clergymen, postal, forest, settlement officers, Railway officers, etc.,—*i.e.*, whose occupation is not covered by some other group—is to be entered under the Order 45 —Public Administration. Government peons, *chaprasis* and such other menials as do not belong to these other establishments will be entered under this order, and not as porters and messengers under Order 21 (Transport by Road).

Analysis of the Occupation Return

420. Main Features of the Return—The marginal diagram shows that with the rest of India, this State continues to be preponderantly agricultural and pastoral. Exploitation of Animals and Vegetation supports 66 per cent. of the population. Exploitation of Minerals is practically non-existent—only 3 per 10,000 being supported by this means. Industry is the principal means of support to 12 per cent. of the population. Trade comes next with 7 per cent. The item "Insufficiently described occupations" absorbs 6 per cent. showing the extent of vague entries. This proportion is the index of the relative accuracy of the return. In 1911, the proportion of vague entries was 7 per cent. In 1901, the corresponding figure was 14·4. Thus it is some consolation that in this most important respect, each succeeding census shows a progressive improvement towards accuracy of record. Liberal Professions come next with 3·3 per cent. Public Administration, Transport and Public Force have respectively 2, 1·3 and 1·1 per cent. Persons living on their own income, and the unproductive classes (beggars, vagrants, persons of criminal and disreputable occupations), each constitutes only 5 per mille of the population.



It has been already pointed out that the census date is likely to affect the strength of the population supported by agriculture. The bulk of the staple crops in the State are reaped by March, and the landless labourer usually has recourse to other sources of livelihood. About the time of census record (February) however, it is not likely that many labourers had left the land, and the proportion given above fairly represents the strength of the principal industry in the State. January and February are rather active picking seasons for the so-called luxury crops; and the enumerators, although they are supposed to represent the actual situation on the census date in March, generally record the state of things in the period of the Preliminary Record. The Final Revision on the census night seldom takes into account the change of occupation that may have happened in the meanwhile. The figures for Trade, Public Administration and Professions are stable and not liable to seasonal fluctuations. Transport probably is inflated with tempor-

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ary accessions of labourers who have been released from the land. The group of labourers unspecified is however the kind of occupation that an agricultural labourer temporarily on his loose ends is most likely to return for himself. On the whole whatever disturbances like these may have happened are corrected by the saving grace of large numbers, and there should be little hesitation to accept the above census distribution as the normal occupational distribution for the year 1921.

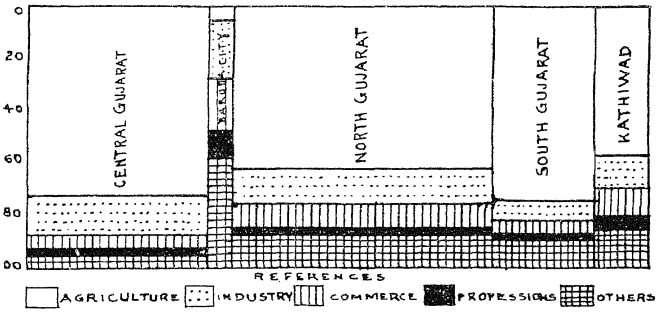
421. Comparison with the occupational distribution of 1911—The marginal statement shows that compared with 1911, the occupational distribution has undergone little change. The principal industry (Agriculture) shows a slightly larger prevalence. Trade (Subclass V) and Transport show increases. On the other hand, Industries and Professions show decline. The "Unspecified" as already mentioned now looms less largely. Domestic servants have increased, but probably this is due to the correcter return. The army effectives have declined in numbers. Servants in State employ have increased. Important differences will be however discussed more suitably when the detailed examination of the occupations is taken in hand.

OCCUPATIONAL DISTRIBUTION (per 1,000)

Sub-Class	1921	1911
I—Agriculture, etc., ..	663·8	655·6
II—Minerals	0·3	0·1
III—Industry	119·2	123·0
IV—Transport	13·2	8·2
V—Trade	66·3	63·9
VI—Public Force	11·0	13·2
VII—Public Administration ..	19·5	18·8
VIII—Professions	32·9	36·7
IX—Independent	5·4	4·2
X—Domestic Service ..	4·3	1·7
XI—Unspecified	59·1	70·0
XII—Unproductive	5·0	4·6

422. Distribution of Occupations by Natural Divisions—Turning to the local distribution of the different sub-classes by divisions, we may study the marginal diagram which has been plotted on the proportional figures of Subsidiary Table III. A marginal statement is also given for convenience of the reader. The City shows as an urban centre the least trace of agriculture, but it is remarkable that 42 per cent. of the population of this place is neither supported by Agriculture, Commerce, Industry or Professions. 23 per cent. or more than half of these are public servants in civil or military employ. About 13 per cent. are absorbed by insufficiently described occupations. It is in the City more than anywhere else that these vague entries predominate. The greater complication of the occupational distribution—which is natural to urban areas—puzzles the enumerator more than the state of things in the districts where occupations are simpler, less varied and more archaic. Here again it is consoling to know that in

DIAGRAM SHOWING THE DISTRIBUTION OF THE POPULATION BY OCCUPATION (CLASSES) IN THE DIVISIONS



Natural Division	Persons Supported per mille by				
	Agriculture	Industry	Commerce (including transport)	Professions	Remaining occupations
State	**640**	**119**	**80**	**33**	**128**
Central Gujarat excluding City ..	717	104	57	31	91
City	58	220	201	97	424
North Gujarat ..	623	134	88	30	125
South Gujarat ..	748	77	51	16	108
Kathiawad	558	134	107	52	149

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1911 more than 16 per cent. of the City's population were returned thus vaguely. Turning to the districts, the Kathiawad division shows the lowest proportion of agriculturists. Its possession of a sea-board points to the existence of a large sea-faring population and the possibilities of commerce. Its soil besides is too poor to work with. South Gujarat with its large Animist population, the bulk of whom are engaged on the land, shows the highest proportion of agriculturists. In Industry, Kathiawad (particularly Amreli *Prant*) and North Gujarat tie for the first place. Kathiawad artisans like carpenters, tailors, blacksmiths, etc., have a well-deserved reputation and are found throughout the State. Their earnings help to support their families in their homes. In Commerce and Transport, this division also shows the largest proportion of persons supported. The remaining occupations absorb 15 per cent. of Kathiawad's population. Next to the City this is the highest proportion. The Dhari and Dwarka detachments of the State Army swell the ranks of those engaged in State employ ; while the unspecified and vague entries are more numerous in Kathiawad than anywhere else in the State except the City.

423. Urban Occupations—From the marginal table given in the preceding paragraph the contrast in the occupational distribution between City and country was evident. To study the occupational situation by broad groups, the statistics were in this census separately compiled for towns. In 1891 it appears that the occupations of urban inhabitants were tabulated separately. The result was obscured as Mr. Govindbhai explains by the inclusion in the category of towns of over-grown villages which little deserved the name. A detailed compilation of statistics for towns is certainly not worth the trouble. But, if by broad classes the occupational figures are obtained, the contrast between town and country cannot fail to be of interest. State Table XXIV has been therefore compiled on the present occasion. Figures for all towns have been compiled by the twelve sub-classes—actual workers only being shewn. Separate figures for 23 individual towns—16 industrial and urban, and 7 agricultural and distributive—are also shewn. As it has been already pointed out in Chapter II—para. 80—the towns which are industrial and of distinct urban characteristics (including the City of Baroda) constitute 71 per cent. of the total urban population. The agricultural and distributive towns, although they number 25 out of 48, only contain 29 per cent. of the urban population. In the selected towns of the first order are included all the industrial places like Petlad, Bilimora, Kalol and Karjan, and also the two temple towns and a few other well - established urban areas like Patan, Visnagar and Kadi. In the agricultural and distributive class of towns Vadnagar, Unjha, Sojitra, Bhadran, Ladol, Unava and Dharmaj have been selected out of the 25. The marginal statement gives the proportion of actual workers engaged in the main occupations in the State, in the City, industrial towns and agricultural and distributive towns. It will be evident therefrom that industrial areas, although more agricultural than the City have a larger proportion of their population engaged in industrial and commercial pursuits. The agricultural towns are little more than overgrown villages and the occupational distribution in those places closely approaches that of the State.

OCCUPATIONAL DISTRIBUTION OF ACTUAL WORKERS IN TOWNS

Occupation	Number per 1,000 workers in			
	State	City of Baroda	Industrial and urbanised towns	Agricultural and distributive towns
Exploitation of animals and vegetation	658	62	172	530
Industry including Mines	121	234	289	187
Commerce and Transport	71	173	186	96
Professions and Arts.	34	93	67	52
Remaining occupations	116	438	286	136
Total ..	1,000	1,000	1,000	1,000

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424. Occupations in the City of Baroda—The main occupations of the City of Baroda may be noticed now in a little greater detail. It will be found from a study of the marginal ratios that the occupational variation differs totally from that of the State. The contrasts are striking. For every person who is an agriculturist in the City there are 11 in the State, relatively to the total population. Apart from public administration and professions generally, in which occupations the proportions are always expected to be large in a city, it is interesting that general labourers of the miscellaneous variety, persons engaged in industries and trades of luxury, domestic servants and the unproductive and disreputable classes figure much more largely in the City than elsewhere in the State. It may be of interest to compare the occupational distribution of the City of Baroda with that of the Cities of Bombay Presidency. The figures for this census are not available, so the comparison can be only with the figures of the last census taken from the Bombay Report of 1911. From the marginal comparison it appears that Bombay Cities have much more commerce and industry, although the persons engaged in the learned professions form a larger proportion in Baroda City. The table also compares the present situation with that of 1911. Commerce seems to have attracted more persons within the decade. while the increased proportion under agriculture is the result of the growing tendency of non-agricultural classes to enhance their social status by investing in land. The progressive decay of the old handicrafts has also helped this process.

Occupation	Number supported per 1,000 in	
	City	State
Public Force ..	98	11
Public Administration	128	26
Persons living on their income ..	33	6
Professions and liberal arts	97	33
Textile Industries ..	46	28
Industries of Dress and Toilet	32	21
Food industries ..	19	4
Income from rent of land	10	9
Ordinary cultivators	38	489
Field labourers ..	5	136
Pasturage	3	22
Transport	56	13
Trade in textiles ..	19	7
Trade generally ..	145	67
Domestic service ..	15	3
General labourers, etc. (Unspecified and vague)	129	59
Unproductive ..	16	5

Occupation	Proportion per 1,000 supported in		
	Baroda City		Cities of Bombay Presidency 1911.
	1921	1911	
Agricultural and Pasturage	58	35	24
Industry including mines	220	225	366
Commerce	201	164	284
Professions	97	103	44

There is another way in which the bearings of the occupational distribution of the City on the total figures for the State can be studied, and that is the proportion of actual workers employed in the City and other areas in each main occupation. In all occupations, of a 100 workers, only five belong to the City. As may be expected, the proportion of workers on agriculture is very small indeed—hardly 5 per mille. But if we take only into account the rent-receivers—Inamdars, Jagirdars and other alienated landholders—16 per cent. of the total of this class are found in the City. Industrial workers of the City form 9 per cent. of their total strength in the State, but taking individual industries, that on furniture absorbs 58 per cent., food 24 per cent. and production and transmission of motive power (electric light etc.) is credited with 81 per cent. Transport workers of the City form 17 per cent. Trade in the City takes up 10 per cent. of total workers in that line, but trades in metals and chemical products each absorb nearly half of the total strength of their workers. The bulk of the army is concentrated in the Capital (79 per cent). Public administration requires 26 per cent. of its personnel for the City. The professions generally have 13 per cent. there, but the City's lawyers and doctors form 39 and 31 per cent. of their respective totals. Persons living on their income in that place are nearly a third of their class. Lastly, the Central Jail, the asylums and the orphanages account for 82 per cent. of the inmates of all such institutions in the State.

425. Rural Occupations—From a consideration of urban occupations we may turn to the rural areas. The agricultural and distribu-

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tive towns, as we saw in the marginal table of para. 423, approach the State average in the occupational distribution generally, and particularly in respect to agriculture. From the City, where they are the lowest, the proportion of agriculturists rises progressively in the industrial towns, then agricultural towns, and finally it reaches its maximum in rural areas where 77 per cent. of the population are engaged in exploitation of animals and vegetation. Industry and commerce are at their lowest ebb in the villages. The factor of vague entries counts the least there also, as the village occupations are few and well-known and the local enumerator is able to fill in the schedules far more correctly in the villages than in large towns.

Occupation	Number per 1,000 workers in		
	All towns	Agricultural and distributive towns	Rural areas
Exploitation of Animals and Vegetation ..	240	530	768
Industry including Mines.	243	187	90
Commerce and Transport.	168	96	45
Professions and Arts ..	69	52	25
Remaining occupations ..	280	136	72

As in the last census, the typical simple industries that are well known in the villages have been compiled and the proportion of persons supported by each in the last two censuses is shewn in the marginal table. According to this table, ten years ago, 866 per mille of the population were supported by these simple occupations. In this census, the proportion supported is slightly less. The occupations pursued in the villages form the bulk of the normal activities of the people. These simple occupations correspond to the simplicity of the villager's wants, his narrow horizon and his limited resources. The self-contained village has been often the theme of writers on India. But the old isolation is fast passing away and the complete equipment of artisans and menials with which the old type of village was furnished is being dissolved by the force of competitive tendencies. As villages become larger, the village barber, blacksmith, carpenter or potter seems to lose the definiteness of his circle of *clientele* (*gharak*). The influence of custom in fixing the remuneration for the hire of labour is also giving way gradually to the laws of supply and demand. In many important directions, the village services are being depleted by the discontented village artisan or menial leaving for towns or large centres, in the hope that with better wages and in newer surroundings his ambitions can be satisfied. The want of scavengers and village watchmen, who are gradually forsaking their traditional occupations, is now being generally felt; the decline amongst *luhars* and *hajams*—to mention two among the essential village occupations—and the emigration of *sutars* to towns, etc., are indications how the rural population which still forms about 80 per cent. is being gradually deprived of their ancestral facilities.

COMMON RURAL OCCUPATIONS

Name of Occupation	Groups included	Number per 1,000 of total population supported in	
		1921	1911
Landlords, cultivating owners and tenants	1, 2, 7	4,987	4,788
Agricultural labourers ..	4, 5	1,391	1,542
General labourers (including construction coolies, etc.)	112, 119, 187	414	572
Stockowners, milkmen and herdsmen	11, 12, 14, 70	219	200
Cotton workers—not including factory employés	25, 26, 27	196	185
Goldsmiths and Blacksmiths..	48, 98	86	108
Brass, copper and bell-metal workers	49	10	11
Carpenters	9, 43, 44,	119	82
Fishermen and Boatmen ..	17, 69, 110, 131	26	26
Oil pressers	61, 62, 133	70	72
Barbers	81	87	97
Washermen	80	13	15
Toddy drawers and sellers ..	74, 129	13	12
Grain parchers	67	3	2
Leather-workers	39, 123, 124	141	142
Sweepers and scavengers ..	103	48	96
Basket-makers and drummers	45, 178	50	39
Priests, temple-servants and religious mendicants ..	165, 166, 168	201	94
Potters	55, 56, 127	132	133
Village quacks and midwives	172	4	5
Grocers and confectioners ..	72, 132, 134	36	30
Grain dealers and money lenders	121, 136	134	125
Tailors	77	73	68
Vegetable and fruit sellers ..	135	77	62
Other shopkeepers including general stores and miscellaneous	Order 40	122	138
Makers and sellers of Bangles	52, 99, 149	32	5
Silkworm rearers and silk weavers	15, 16, 34, 35	3	6

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426. Normal occupational distribution in a village of 1,000 persons—Taking the proportions of the above table, we should expect to have, in a village of 1,000 inhabitants, 741 agriculturists of whom 579 will be landlords and cultivators, 162 agrestic labourers and farm servants, 48 general labourers, 25 stock-owners and herdsmen, 23 cotton workers (hand-weavers, spinners, etc.), 23 priests, temple servants and mendicants, 16 leather-workers, 16 money-lenders and grain dealers, 15 potters, 14 carpenters, 10 barbers, 10 goldsmiths and blacksmiths, 9 vegetable and fruit sellers, 8 tailors, 8 oil-pressers, 6 *bhangis* (sweepers and scavengers) and barely two *dhobis*. These proportions are of persons supported by the occupations and not actual workers. From the latter point of view, it must be concluded that for the requirements of a village of this size, the supply of necessary services—like barbers, tailors, *dhobis* and sweepers—is very inadequate indeed.

It is interesting to compare these ratios with those worked out for the Central Provinces in 1911 by Mr. Marten. In the margin are given comparative figures which show a remarkable general correspondence. In the Baroda village apparently there are fewer labourers, blacksmiths and goldsmiths, but on the other hand there are more cultivators, money-lenders and grain dealers, tailors, barbers, potters and scavengers. The village services, though undermanned in this State, appear to be better off generally than in the Central Provinces. The larger proportion of cultivators in the Baroda village is due to the State encouragement of *Khata* holdings which has led to a striking increase of peasant proprietors in recent years.

Occupation	Number in a village of 1,000 persons in	
	Baroda 1921	Central Provinces 1911
Landlords and cultivators	579	474
Labourers and farm servants	210	276
Stockowners and herdsmen	25	25
Cotton workers ..	23	22
Barbers	10	6
Money-lenders and grain dealers ..	16	10
Tailors	8	4
Potters	15	5
Leather workers ..	16	8
Goldsmiths and blacksmiths	19	11
Washermen	2	5
Scavengers	6	2

427. Workers and Dependents—The distinction between workers and dependents is a very difficult question to decide. The general instructions as well as the additional ones in this regard have been already quoted. But it is difficult to lay down exact tests and specific rules which could be uniformly interpreted. At what age a child is considered to have ceased to be dependent and become an earning helper it is always difficult to decide. Then the question of the woman in the family is another problem. How far woman's help in agricultural operations is sufficient to enable the head of the household to do without hired labour, and how far such help enables the woman to pass from a dependent to a worker are questions that frequently come up for settlement. Again in regard to industries like cotton and silk weaving, the test of the receipt of a wage was dispensed with, so long as there was evidence that the work of a woman or a child helps to augment the family income. There was lastly the question that if help was rendered what occupation was to be entered against the helper's name. Thus in agricultural operations, the wife of a cultivator may assist in various subsidiary ways such as carrying water or even by mere menial labour. The question often arises whether to treat her occupation as the same as that of her husband or to class it under agricultural labour. It was in such cases laid down that wherever the kind of assistance was specified, the occupation to be entered was to conform to the specification, but that otherwise the occupation of the principal member of the family was to be entered. Generally the figures regarding workers have to be received with a little caution, but such as they are, the marginal statement showing the proportions of workers and dependents in the four main classes and the twelve sub-classes may be studied. Only in two classes—domestic service and unproductive occupa-

Sub-class		Percentage of	
No.	Designation	Workers	Dependents
I	Exploitation of Animals and Vegetation ..	40	60
II	Exploitation of Minerals ..	27	73
	Total of Class A ..	40	60
III	Industry	41	59
IV	Transport	40	60
V	Trade	36	64
	Total of Class B ..	39	61
VI	Public Force	45	55
VII	Public Administration ..	36	64
VIII	Professions and Liberal Arts	42	58
	Total of Class C ..	41	59
IX	Independents	37	63
X	Domestic	53	47
XI	Unspecified	47	53
XII	Unproductive	58	42
	Total of Class D ..	48	52
	All Occupations ..	41	59

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tion—do workers predominate. The servants in State employ and independent classes—person living on their own income—have the largest number of dependents, as is to be expected.* Public administration means a certains table competence and that attracts a profusion of hangers-on—poor relatives and other dependents. As we go lower down the social strata, we find the proportions of workers increasing amongst populations on the margin of comfort or of subsistence. Agriculture has a percentage of 41 for its workers, but this figure is the mean of varying proportions ranging from Inamdars (33), cultivating owners (34), rent receiving *khatedars* (37), cultivating tenants (40), farm servants (54) and field labourers (61). Thus affluence is in inverse ratio to the proportion of workers. Similarly in Industries, workers in gold, precious stones and metals, and furniture workers have a larger proportion of dependents than other industrial workers. In trade also, bankers, money lenders and others of their kind support a larger number of dependents per worker than people who sell leather articles or trade in pottery, bricks and tiles.

428. Local distribution of workers and dependents—The local distribution of workers and dependents affords another interesting study. The comparatively high proportion of workers in the City is owing to the fact that a large section of its population are immigrants, living without the full complement of their families and the number of dependents amongst them is thereby reduced. The rather low proportion of the workers in the Northern Division is due more or less to the social attitude of its inhabitants which is opposed to the association of females in their men-folks' daily avocations. In some measure, the leasing of large areas of land has helped the growth of peasant proprietors who are not always of the agriculturist class. As a matter of fact the tendency for land to pass from agricultural to non-agricultural classes within recent years has become very evident generally in the State and in that division in particular. The *Sowcars* have taken advantage of the prevailing economic depression to foreclose their debtors' land and turn themselves into landlords. These classes have usually a low proportion of workers. Further the agricultural and industrial depression has caused an outflow of able-bodied workers—a particular type of drain to which Kadi *Prant* is peculiarly liable. In Kathiawad the proportion of workers is evidence, I take it, of the joint influence of emigration which lowers, and the poverty of its inhabitants which raises, the proportion of its workers. Besides cotton is one of its staple crops, which requires little outside labour; generally cotton growing areas should show therefore rather a high proportion of workers, because, wherever little labour is required women and children of the house are fully utilised in it. In South Gujarat, the large aboriginal population is poor and cannot afford the hire of labour. There is besides no objection to their females joining the men in the field or factory.

Division	Proportion of workers per 100 persons supported in				
	Agriculture	Industry	Commerce and transport	Profession generally	All occupations
State	**40**	**41**	**36**	**42**	**41**
Central Gujarat ..	40	44	37	43	41
City	42	47	38	42	44
North Gujarat ..	36	38	37	42	37
South Gujarat ..	50	46	36	40	49
Kathiawad	40	40	32	40	40

429. Occupations of Females—In this State, and in Gujarat generally, there are few castes which insist on the seclusion of females; in consequence the proportion of females amongst workers is fairly high. In 1911, there were 431 female workers to a thousand male. In the present census, the ratio is 396. In respect of Sub-class II, the absolute figures are too few to be worth noting. Of other occupations domestic service shows a preponderance as expected of females. Amongst persons living on their income, there are many women pensioners of State or widows living on their cash investments. Public Force, Public Administration and professions show in the order stated naturally the least proportion of

Sub-Class		Number of female workers per 1,000 male
No.	Designation	
I	Exploitation of Animals and Vegetation ..	426
II	Extraction of Minerals ..	3,211
III	Industry	356
IV	Transport	194
V	Trade	244
VI	Public Force	....
VII	Public Administration ..	58
VIII	Professions and Liberal Arts	184
IX	Independent	500
X	Domestic Service . ..	1,457
XI	Unspecified	693
XII	Unproductive	477
	All occupations ..	**396**

* Exploitation of minerals shows the lowest proportion of workers, but the absolute figures of workers in that occupation are so small (160) that nothing need be made of them.

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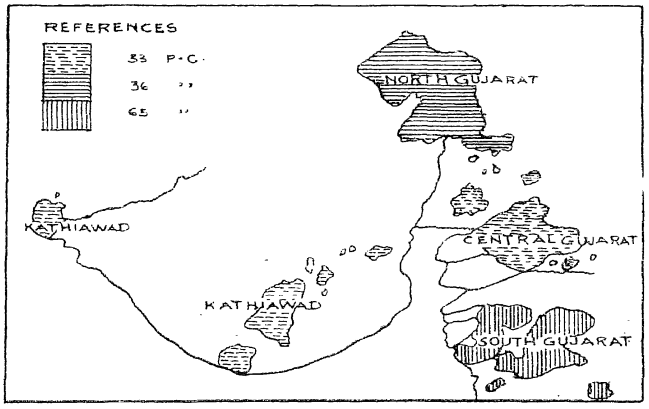
women workers. The variations are even more striking when we take specific occupations. In the margin a few occupations where women bulk largely as workers are shewn. Some of these are worked by the women independently of their men-folk such as Group Nos. 1, 181, 135, and 65. There are others like 55, 103, 66 or 5 where they join the men and work together. In particular occupations like spade cultivation, woman labour is very much in demand. Thirdly there are occupations to which women take to supplement their husbands' earnings as in 187, 27 or 77.

Group		Number of female actual workers	Number of females per 1,000 male workers
No.	Designation		
5	Field Labourers	103,677	1,440
1	Income from rent of land ..	2,610	625
187	General Labourers	23,196	1,182
181	Cooks, water carriers, indoor servants	2,740	2,007
135	Carda nom, betel-leaf, vegetable, areca-nut and fruit sellers ..	3,411	842
103	Sweepers, scavengers	1,875	598
77	Tailors, milliners, dress makers, darners and embroiderers on linen	3,237	748
65	Rice pounders and floor grinders.	1,772	2,685
66	Basket-makers, leaf-plate makers	1,339	1,062
55	Potters, earthen pipe and bowl makers	3,628	494
27	Cotton sizing and weaving ..	5,295	510

430. Proportion of female workers in the Natural Divisions—The marginal map shows where women workers form the largest proportion. South Gujarat, as always, shows the largest proportion of female workers, there being 66 to even hundred male workers. The explanation lies in the racial composition of the people of that division and also in the fact that in South Gujarat, agriculture predominates more than anywhere else.

MAP SHOWING THE PROPORTION OF FEMALE TO MALE WORKERS IN EACH DISTRICT



The racial composition of the people shows the sex ratio of workers in an interesting way. Subsidiary Table VIII shows that among workers of aboriginal descent, like Kolis and Forest tribes (Bhil, Dhanka, Gamit or Nayakda) the proportion of women workers is very high ranging from 601 in the case of Chodhra cultivators, to Dhodia (1,123), Gamit (1,117), etc. Marathas and Rajputs in their traditional occupation of arms little require the help of their womenkind. Amongst Lewa Kanbi cultivators, only 80 women workers to 1,000 men exist. Among Kadwas, the ratio of female workers is higher (212).

431. Effect of women's work on general wages—Lastly while we are on the topic of female workers, it is necessary to point out that woman's share in the occupations, even where she independently engages herself in any kind of living and particularly where she works alongside of the men, is comparatively light from the point of view of physical exertion. The way in which the men often spare the exertions of the women in field labour, or any construction work or earth digging is frequently commented on by observers who have any experience of Indian labour. As Mr. Blunt points out, "The man digs, the woman carries the earth dug and flings it on the road or embankment that is being built but the man will fill her basket for her and lift it on to her head, thus saving her even the exertion

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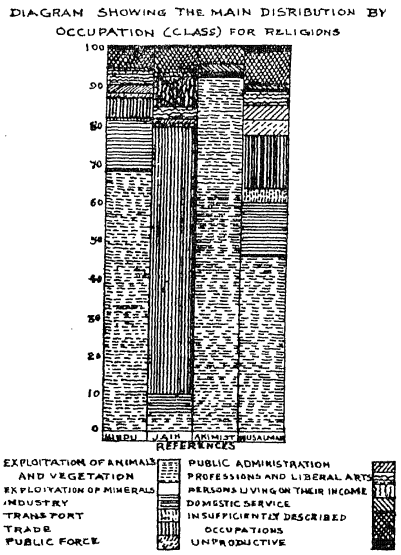
of bending."* This is one reason perhaps why the woman rarely competes with the man in wages. The demand for her labour is strictly regulated to her supply and has no reference to the shrinkage or otherwise of the male labour supply. The two sexes belong to totally different worlds of work. Even in industries where they are fairly closely associated, like in cotton, pottery, oil, etc., each is put on to special branches, where the other is not necessary. The scale of wages is separate for each and no employer of labour ever thinks of under-cutting a man's wages by substituting female labour for male.

432. Occupations by Religion—Subsidiary Table IX gives the proportional figures for occupations by religion. It shows first the distribution by religion of 10,000 persons following each occupation and then the occupational distribution of 10,000 persons in each religion is shewn. In the marginal diagram, the occupational distribution in each main religion is plotted. Amongst Hindus, agriculture takes first rank, supporting 68 per cent. of their total strength. Industry supports 13 per cent. of their number. In Public administration and professions generally, only a little over 5 per cent. of Hindus find their livelihood. 69 per cent. of Jains are traders and eight others are persons living on their own income. The vast majority of Animists (93 per cent.) are engaged on the land or in the exploitation of animals. Amongst Musalmans, 46 per cent. are so engaged. By industry and trade 27 per cent. of Musalmans (almost equally divided in the two) support themselves. 20 per cent. of Parsis are engaged in trade —their traditional occupation, 11 in industry and 11 in the learned professions. No less than 1,545 Parsis or a fifth of their strength have returned themselves vaguely as cashiers, accountants, clerks, etc. of unspecified offices. Of Christians 38 per cent. are in industry mostly weaving of cotton, and 27 per cent. are in agriculture or allied pursuits.



The Hindus form 82 per cent. of the population. In the largest industry—Agriculture and exploitation of animals—the Hindus form more than 83 per cent. In Industry—another large item, the Hindu proportion is larger than its strength in the general population. In Public administration and professions generally, they also figure more largely than their total strength would warrant. But in the Public Force, they form only 66 per cent., in trade their share is even smaller (62) and amongst persons living on their own income the Hindus are 67 per cent. The Hindu transport workers are 74 per cent. of their class. In domestic service also and in insufficiently described and unproductive occupations, their proportions are small relatively to their proportion to the total population. The Musalmans only form 7·6 per cent. of the total, but their share in Public defence is much larger—namely 30 per cent. In domestic service as in transport they are also much more in demand proportionately. In Public administration, their proportion is 14 per cent. but it is only in the lower ranks as peons, havildars and the subordinate establishments that they figure. Similarly in the Professional groups, except as priests or fakirs and teachers, their contribution is generally insignificant. Amongst unproductive classes, the Musalmans form quite one fourth of beggars and vagrants and the majority of prostitutes. The Jains are only 2 per cent. of their population and yet they have a large share in the trade of the Raj, forming 21 per cent. and amongst persons of independent means, the Jains number 31 per cent. But their contribution to Public defence, as expected from a commercial and unwarlike section, is almost nil, and in Public administration and professions, their quota is much smaller than their strength.

* *Vide* United Provinces Census Report of 1911, p. 402.

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433. Occupations by Caste, Tribe or Race: traditional occupations—Various aspects of the question of caste and occupation have been already dealt with in the previous chapters, *e.g.*, in connection with marriage and fertility, infirmities and education. Here our primary concern is to see how far the traditional occupations still persist in the different castes. In the margin, the castes which show high proportions of persons supported by their traditional occupations are contrasted with castes which are generally discarding them. The point to note about the high figures is that only such traditional occupations in the artisan groups as have continued to be profitable show high proportions such as Darjis, Sonis, and Sutars, while the industrial groups, the poorer classes of Bhois, Ravalias and Vaghris are forsaking their ancestral calling and taking to cultivation or agricultural labour. The want of opportunity to practise it has led Rajputs and to a lesser extent Marathas to abandon their occupation of arms. The Brahmans realise that they have fallen on a less credulous age and are fast leaving their priestly avocations for public administration, the professions, trade and even industry ; a similar tendency is observable amongst the Saiyads. Land continues to attract the agricultural classes, whose characteristic tenacity to their traditional livelihood inspite of its increasing unprofitableness is one of the most pathetic features of the occupation return. But while the typical agriculturists still cling to their land, the influx of the other classes amongst their ranks has added to their difficulties. The promotion of agricultural labourers to the status of peasant proprietors has been already mentioned (*vide* Chapter I, para. 76) as one of the causes of the rise in wages in agriculture. Koli cultivators formed 50 per cent. of their total workers in 1911—in 1921, this proportion is now 54. The decline in weaving and cotton carding occupations is seen in the much smaller proportion of Pinjara workers returned in the present census as working on their traditional occupation than in 1911. There are now only 24 per cent. of Dheds engaged in weaving. In 1911, the proportion of weavers amongst Dheds was 28. Amongst tanners, the Chamars show a similar decline from 51 to 41 in the proportion of their workers on leather. The influence of education and social uplift has led castes like Bhavsars and Ghanchis to leave their traditional professions. The proportion of Bhavsars as calenderers and dyers in 1911 was 54 per cent., it is now only 34. The Ghanchis following their old calling as oil-pressers constituted 60 per cent. of their total workers in 1911. In 1921, the oil-pressers amongst them are now just about half. The Tapodhan Brahmans, 21 per cent. of whom were temple servants in 1911, do not appear to have any liking for that occupation as there are only now 11 per cent. who are devoted to temple service.

Caste	Name of traditional occupation	Proportion of workers per mille in traditional occupation in 1921	1911
	HIGH FIGURES		
Darji	Tailors	964	955
Soni	Goldsmiths	863	867
Kadwa Kanbi	Cultivators	836	852
Lewa Kanbi	,,	817	754
Mochi	Shoemakers	791	781
Anawala	Cultivators	785	784
Sutar	Carpenters	761	778
Memon	Traders	700	314
Rabari	Graziers and cattle-breeders	653	518
Luhana	Traders	651	678
Vania Disawal	..	614	608
Kumbhars	Potters	600	675
Bhangis	Scavengers	532	504
	LOW FIGURES		
Rajput	Military and dominant	31	34
Shenva	Village watchmen	32	62
Vaghari	Fowlers and Hunters	40	52
Saiyad	Priests	86	178
Deshastha Brahman.	..	96	129
Mewada ,,	..	100	242
Bhoi	Fishermen and Palki bearers	127	146
Nagar	Priests	164	263
Ravalia	Tape-weavers and Drummers	150	343
Ahir	Cattle graziers	170	100
Audich	Priests	207	331
Pinjara	Cotton carders	235	270
Maratha	Military and Dominant	259	349

434. Occupation of literates in English—One other matter of general interest may be dealt with before the detailed examination is taken in hand. State Table XIII gives the occupations by sub-classes and age periods of literates in English. Of 14,773 male literates in English, 9,183 or 62 per cent. and of 887 female literates in English, 189 or 21·4 per cent. are workers. Of the total workers only 2 are below 10 years in age, 168 between 10 and 15, 816 between 15 and 20, 3,322 between 20 and 30 and 5,064 workers are aged 30 and over. The following

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statement gives the proportionate figures of workers among them in each kind of occupation :—

OCCUPATION OF ENGLISH LITERATES

Sub-Class		Number of persons supported per 10,000	Number of actual workers per 1,000 persons supported	Proportion to 1,000 workers of all ages of those aged			
Number	Designation			0–10	10–15	15–30	30 and over
1	2	3	4	5	6	7	8
	All occupations ..	**10,000**	**598**	**0·2**	**18**	**441**	**541**
I	Exploitation of Animals & Vegetation	1,584	452	1·8	28	574	396
II	Exploitation of Minerals ..	2	1,000	..	..	333	667
III	Industry	446	649	..	13	446	541
IV	Transport	721	786	..	..	404	596
V	Trade	1,515	563	..	9	487	504
VI	Public Force	256	648	..	..	377	623
VII	Public Administration ..	1,966	617	..	2	371	627
VIII	Professions	1,841	673	..	47	450	503
IX	Independent..	748	461	..	18	335	647
X	Domestic Service	54	381	..	63	531	406
XI	Unspecified	819	645	..	7	452	541
XII	Unproductive	48	566	..	116	535	349

The figures of dependents are interesting. The proportion of all workers (literate or illiterate) is 41 for the State. The proportion of workers amongst English literates is high in the first place because, there being few females who know English, and they are the largest proportion of dependents usually, the number of dependents literate in that language is naturally small. In the second place, English education which is more or less a stepping stone for the higher branches of public service and the professions enables more than one member of the family to be earners and thus distributes the burden of supporting a family among more heads than one. Lastly, it is well-known that English-knowing persons are apt to strain at the control of the joint family : the tendency to break up into smaller units is encouraged and thereby the size of the household, and consequently the number of the dependents, become diminished. For these reasons, the general conclusion that affluence varies inversely with the proportion of dependents does not apply in this case. Public Administration and Professions have each over 60 per cent. as workers of persons supported by it. Transport workers, it is true, form 79 per cent. of the total of persons supported. But this is due to the fact that most of the transport workers who are English-knowing are on the Railways and generally outsiders. Immigration therefore affects the ratio of dependents.

It is remarkable from the above table that among literates in English, there is not the same consuming passion for agriculture as in the general population. Only 16 per cent. go in for Sub-class I. One reason for this circumstance is that English education is practically confined to towns, where the number of agriculturists is not large. Secondly, only such castes as do not take kindly to cultivation happen to specialise in knowledge of English. From the present figures one cannot tell whether English education is tending to take people away from the land. This table has been compiled for the first time in this State and comparative figures therefore are not available. But generally in India this is said to be the case. In this State, agriculture has gained rather in volume, at the expense of arts and crafts. But English educated sons of agriculturists do take to other callings. What has actually happened is this : literates in English amongst agricultural groups have emigrated in increasing numbers, but their numbers are so small that the general proportion of the agricultural population has not been affected thereby. In the margin the most numerous classes of male workers who know English are indicated. Public administration is an easy first, although liberal professions are not far behind. Between the two, 38 per cent. of English literates are supported. Under "Unspecified"—Sub-class XI,—there figure 845 male and 12 female workers. Most of these are clerks, cashiers, etc., of unspecified offices. The "Unproductive" workers are 42 males and 1 female. These are mainly inmates of the

NUMBER OF ACTUAL MALE WORKERS IN

Public Administration ..	1,891
Arts and Professions ..	1,799
Trade	1,331
Agriculture, etc	1,115

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lunatic asylum and the orphanage. Domestic servants who are literate in English are mostly Surtis and Mahars in the employ of Europeans and Anglo-Indians.

Taking the figures of actual workers by religion we find that 7,226 male workers are Hindus, 616 are Parsis, 569 Jains, 544 Muslamans and 178 Christians. 249 Jains and 156 Musalmans are engaged in trade. 137 Parsis work on the land and 118 others are clerks or employés of unspecified offices. Among female workers, the largest number (122) are Indian Christians—most of whom are catechists, mission readers or teachers. The three Animist workers who know English are engaged in agriculture.

435. A Brief Review of Occupation Statistics by sub-classes and main orders—I will now deal with the principal occupations of the people of this State a little more in detail. Already in course of the general remarks on the returns, certain aspects of the different occupations have been touched. In our present discussion we shall follow the order of the standard classification. Subsidiary Table I gives the proportionate figures of persons supported in each class, sub-class and order of occupations. The comparative figures of the present and the previous two censuses are given in Subsidiary Table VII. As the general scheme of classification has not been much interfered with on the present occasion, the study of variations since 1911 is comparatively an easier task than between 1901 and 1911. Occasionally, a little reshuffling of the contents of orders, and sub-classes has been necessitated. The variations moreover are vitiated sometimes—as already pointed out—with errors of record and of compilation—confusion between makers and sellers, etc., and occasional difference of interpretation in the methods of classification have given rise to apparent variations which are not in accordance with facts. For these reasons, Subsidiary Table VII has to be read with some caution, but on the whole the variations between 1911 and 1921 are far more reliable than between 1901 and 1911.

436. Class A. Production of Raw Materials—The primary concern of every industry is the production of raw material which is therefore the basic industry. Such raw material necessary for every occupation is produced by working upon the soil, or under it. Secondly, the exploitation of animals, such as breeding, pasturage, fishing and hunting is the necessary preliminary to certain important industries connected with food and raiment. 1,412,330 persons in the State or 664 per mille derive their livelihood from these primary industries. These are broadly grouped into Order I—Pasture and Agriculture—supporting 1,408,944 or 99·8 per cent. of the total of this class; Order 2—Fishing and hunting—occupies 2,719 persons, and Orders 3-5 are connected with the exploitation of minerals with which this State has hardly any concern.

437. Sub-class I—Order I—Pasture and Agriculture—Pasture and agriculture combined is further sub-divided in the scheme into (*a*) ordinary cultivation, (*b*) growing of special products and market gardening, (*c*) forestry and (*d*) raising of farm stock and raising of small animals. Ordinary cultivation is the largest section of this sub-class and is further sub-divided into five groups, as indicated in the marginal table. Income from rent of agricultural land supports 9 per mille of the total population or 1·4 per cent. of the total number engaged in agriculture. Ordinary cultivators form of course the great majority (or 77 per cent.) of the total so engaged; their number is so large that they form the most important group in the occupation return. No less than 49 per cent. of the population are returned as ordinary cultivators. The next group in importance is also contained in Order I—*viz.*, agricultural labourers who form 14 per cent. of the total population. We shall consider the distribution and variations by groups in this order, as they are the most important.

ORDINARY CULTIVATION

Number of group	Name of group	Persons supported in 1921	Persons supported in 1911	Variation per cent
1	Income from rent of agricultural land..	18,965	25,681	—26
2	Ordinary cultivators	1,039,217	944,994	+10
3	Agents, estate managers and other employés	4,444	211	+2,006
4	Farm servants ..	6,664	313,479	—5·6
5	Field labourers ..	289,151		

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The general variation in Order I from 1911 is an increase of 5·9 per cent., but within the groups there are large departures from this figure. While field labourers and farm servants have declined by 6 per cent. the landlords and rent receivers (group 1) have declined by 26 per cent. Ordinary cultivators have largely increased, while agents, estate managers and other employés have multiplied twenty-fold. The increase in group 3 is obviously untrue. In 1901 the number of such persons was 1,950. The 1911 figures therefore are very probably a mistake.

On the present occasion an attempt was made as part of the economic census to estimate the strength of individual agriculturists according to their status. The Revenue records give details of Khatedars (rent-paying holders of government land), Inamdars, *barkhali maliks* (holders of alienated land) and so on. They also give particulars of caste of Khatedars and their distribution according to the size of their holdings. The Revenue figures however proceed on the basis of the holding as the unit, and not the individual holder. A Khatedar holding Khatas in different villages would be counted separately in the *Khatavahis* for each village. A demographic survey, as apart from the Revenue, would rather want to know the strength of the human factor, and it was thought from that point of view that the census was a good agency with whose aid a fairly reliable record of persons supported in each sub-group of agriculture can be prepared. Mr. Sedgwick of the Bombay Census was undertaking a similar detailed census of agricultural occupations and I had the advantage of his advice and notes on the subject. In fact our instructions in this regard were based almost entirely on his. On the whole a broad division of Inamdars, landlords and rent-receiving Khatedars representing rent receivers, and of rent payers consisting of cultivating owners, cultivating tenants and cultivators unspecified was laid down. Further details are unnecessary and too much refinement would have puzzled the enumerators. But a distinction was necessary, and was made, between receivers of agricultural rent and receivers of house rent. The latter were included in Order 51 under Persons living on their own income. With these were also included receivers of *Vatan* income or service grants in cash. It was also laid down that the distinction between rent receiving Khatedars and rent paying Khatedars (cultivating owners) was based on the presence or otherwise of sub-tenants (*ganotias*). Where a Khatedar cultivated his land by means of farm servants and not through tenants, he was treated as a cultivating owner.

In the following paragraphs, we shall compare the census figures with Revenue department statistics in so far as the comparison is possible. We shall take the landlords first.

438. **Landlords**—As we have seen, the landlords appear from the census to have declined by 26 per cent. Of the total of landlords, 3,134 are Inamdars, Jagirdars and holders of alienated land, and 15,831 are rent-receiving Khatedars or holders of Sarkari land who pay rent to the State, but have sub-leased to tenants who cultivate their land for certain payment either in cash or kind. Of the latter total, the number of actual workers is 5,764. These workers correspond in part to what are called in the Revenue records, landlords or Khatedars who do not cultivate their lands. According to the Revenue figures, there were, in 1911, 58,509 Khatedars, who got others to cultivate their lands. In 1920, this number rose to 66,887 or by 14·3 per cent. The Revenue figures include cases of cultivators who employ farm hands and hired labour on their land, and not rent receivers merely; for it is their purpose to show the proportion of the true non-agricultural element among the peasant proprietors. In that view, that such an element has increased cannot be doubted. The census strove to isolate the rent-receivers from among the holders of government land and to estimate their strength. It is also of great economic interest to find from the census figures that there is a decline amongst landlords of all kinds. Separate census figures for Inamdars and rent-receiving Khatedars are not available for 1911. But the first named must have declined from all accounts. The process of resumption of alienated lands has been accelerated by the decay of the old families and has compelled many of them to come down to the class of mere cultivating owners or even tenants. There is also no reason to doubt the testimony of the census figures that the rent-receivers amongst Khatedars have declined. The present economic stress has rendered any kind of absentee landlordism an increasingly unprofitable business.

Of the Inamdars, Jagirdars, etc., 2,534 are Hindus, 528 are Musalmans and 36 Parsis; 1,023 are workers and 2,111 are dependents amongst them.

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439. Ordinary cultivators—Group 2 consists of cultivating owners, cultivating tenants and cultivators unspecified. It is possible that the census figures are vitiated by many of the tenant class wishing to be recorded as cultivating owners. The distribution is indicated in the margin. The Revenue figures are also given there alongside of the census figures. Cultivating owners (actual workers) number 326,891. Together with rent-receiving Khatedars (workers) they total 332,655. This figure ought to correspond to the Revenue department total of Khatedars; for 1920, the total number of registered holders of land (government and alienated) was shewn in the Revenue Administration Report to be 328,160. Only the holder whose name is registered in the village record is so included in that total and not such members of his family who, though not registered as co-holders, help him materially in the work of cultivation. His wife or grown-up children may be workers with him and are therefore returned as such in the Census. From the list of Khatedars their names are however excluded.

CENSUS FIGURES OF 1921

Kind	Number supported	Number of workers	Variation since 1911
Cultivating owners	957,421	326,891	—1·0·0
Cultivating tenants	79,435	31,513	
Cultivators unspecified	2,261	956	

REVENUE DEPARTMENT FIGURES

Year	Number of total Khatedars	Variation per cent
1911	307,958	..
1920	328,160	+6·6

The variation since 1911 as shewn in the Revenue figures may be accepted as more correct. Apart from natural causes this increase is in part due as mentioned already to accessions to the ranks of peasant proprietors from lower orders, who had hitherto been only landless labourers and in part to recruits from artisan groups who have failed at their business and are now trying their luck on the land.

440. Farm servants and agricultural labourers—The total of these two groups now numbers 295,815 (179,271 workers). The census shows that these have declined by nearly 6 per cent. The extension of cultivation in the State has now left such a little margin—*vide* Chapter I, para. 76—that one would have expected an increase—if anything in the strength of the landless agriculturists, *i.e.*, those who are on the margin of work taking to any casual living that comes in their way. The decline in their number, as revealed by the census, is real and need not be doubted. It is due to two main causes. The toll of epidemics and famines—of which we had more than our usual share in the last decade—is always the heaviest from these classes. The natural causes therefore operated powerfully in decimating their numbers. Secondly the extension of cultivation also tended if indirectly to cause this decline. There is very little of cultivable land left unoccupied in the State; the best cultivators will not usually care for it, and as each additional acre is leased for cultivation, there being less and less demand from the real agriculturists, more and more these landless labourers drift in to take it up. Thus year after year, Kolis, Rabaris, Ravalias, Vagharis, and even Bhangis are becoming Khatedars in increasing numbers. The agricultural labourers (and as we shall see later, fishermen, scavengers, etc.) have therefore declined and the cultivators have increased.

441. The Hali system in south Gujarat*—The farm servants were not isolated from ordinary agrestic labourers in the last census. On this occasion their figures have been separated. Of the 6,664 farm servants (3,601 workers), the majority are in Navsari. These are the so-called *Halis* or indentured agrestic serfs—the creation of a condition of things arising from the impact of a superior race like Parsis or Anavalas on a rude and primitive people like the Rani Bhils of South Gujarat. The majority of the agricultural labourers and farm workers in Semi-Rasti and Rani areas (*e.g.*, Palsana and Vyara Talukas) belong to this class. The *Halis* are either *bandhela* (Literally bound) or *chhuta* (semi-free). The *Bandhela Hali* is nothing but a debt-serf. The usual practice with these Parsi and Anavala landlords, timber-contractors or liquor keepers is to lend a sum of money varying from 100 to 300 rupees to these tribes; so long as the money is not repaid, the individual debtor has to sign away his services to his creditor, and promise not to serve any other employer but his present *dhaniamo* (creditor-master). He receives a subsistence wage of about Rs. 2 a month, besides food twice a day (which is conditioned on the completion of his daily task work), clothes and shoes. Not infre-

* *Vide* Mr. G. R. Nimbalkar's Revision Settlement Report of Palsana Taluka 1910-11, p. 5.

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quently, the creditor plies his unwary victim with drink the value of which is added to his debt. The poor aboriginal gradually sinks more and more into indebtedness, and the system often leads to lifelong service. After his death, the *Hali's* heir is not responsible for his debts thus proving that the status is not a hereditary one. Primarily a farm servant, the *Hali* not unoften has to do domestic duties as well. The *Chhuta Hali* is rather a superior type of serf, and his terms are easier. He gets higher emoluments, being paid daily in corn—4 seers *juwar* for himself and 3 seers for his wife, if she works also. He is free to leave and serve another master, but his loyalty is often bought by promise of payment of expenses on marriage, etc. He is a debtor to his *dhaniamo*, but his relations towards him partake more of the usual character of ryot and *sowcar*. Generally on enquiry it is reported that the *Chhuta Hali* is fairly contented with his lot. The *Bandhela Hali* however is very often tyrannised over. He not seldom absconds from his master. The more intelligent of the *dhaniamas* are for this reason beginning to realise that the system is no longer advantageous.

442. Local distribution of landlords, etc.—The general distribution of agriculturists in the different divisions has been already dealt with. But how their different grades are distributed may be seen from the marginal table.

Proportion per mille of persons who are	In				
	Central Gujarat	North Gujarat	South Gujarat	Kathiawad	Baroda State
Agriculturists	717	623	748	558	640
Landlords	12	8	3	14	9
Cultivating owners ..	469	525	380	364	450
Cultivating tenants ..	76	13	51	19	38
Agricultural labourers ..	155	72	298	152	136
Farm servants	2	1	13	4	3

One reason why Kathiawad contains relatively a larger proportion of landlords and rent-receivers is the size of the holding. 58 per cent. of *Khatas* in that division are of the size of 25 bighas (15 acres) and over. In Central Gujarat, such holdings only form 20 per cent.; in North Gujarat 23 per cent. and in South Gujarat 24 per cent. It is generally true that the larger the holding and the more dispersed it is, the more is the likelihood of subletting parts of it to tenants or co-holders. The largest proportion of agriculturists is in South Gujarat, but the proportion of cultivating owners is very low relatively. This is explained by the fact that the largest number of agricultural labourers and farm servants is found there.

443. Occupations combined with Agriculture—Imperial Table XVII as already pointed out gives for each occupation figures of persons who also have some agricultural pursuit as a subsidiary means of subsistence. Subsidiary Table IV gives proportionate figures of these cases. Imperial Table XVIII on the other hand gives details under a few main heads of the secondary occupations which agriculturists of different kinds pursue. These statistics are reduced to proportionate figures in Subsidiary Table V. Both these Subsidiary Tables, it may be mentioned, refer only to actual workers.

Taking the figures of the first kind, we find in the margin the chief occupations where agriculture as a subsidiary source of income is most favoured. Of the non-agricultural workers (including growers of special products and those engaged in forestry, pasturage, fishing and hunting), 19 per mille* are returned by the Census as partially agriculturists. This figure I am afraid does not adequately represent the preference that exists in all ranks of the community for agriculture. Industry, particularly textile, should in a more accurate return show a much larger proportion of partial agriculturists amongst its workers. In trade also I presume the proportion of 22 per mille is too little. From the Revenue Reports it is found that there are 15,830 Vania registered Khatedars. If we take each Khatedar to be a worker in the census sense, we shall not be far wrong. From Table XXI we learn from the figures of Disawal, Lad and Shrimali Jain Vanias that there are 22

Name of non-agricultural occupation	Proportion per mille of workers who are partially agriculturist
Pasturage	31
Textiles	62
Wood	57
Metals	80
Trade	22
Public Administration	36
Professions	35
Independent ..	31

* *Vide* Subsidiary Table IV.

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dependents to 10 workers. Taking this ratio to hold good for the whole Vania community the number of Khatedars given above would mean 34,826 dependents or a total of 50,656 persons supported. The Vanias in all number 78,430 persons, so that a majority of them derive their livelihood in some way however small from the land. From Imperial Table XXI we learn that in these four representative Vania castes only 29·2 per mille of total workers have returned some form of agriculture as their principal occupation. If we take this proportion to be correct, the conclusion is forced upon us that the proportion worked out for agriculture as a subsidiary occupation for Vanias among the trading class is wholly inaccurate and that the bulk of them (the Vanias at least) have taken to agriculture as a secondary living. On the whole, the enquiry regarding subsidiary occupations is really not much worth the trouble. We get little out of it, and what little we do get is vitiated. In fact the distinction between principal and subsidiary is little appreciated and the test of income, particularly when the enumerator is strictly enjoined not to enquire into the size of it, seems rather futile.

In regard to the combination of occupations with agriculture where agriculture is the principal calling, the figures are rather more worthy of consideration. It comes to this that agriculture is such a matter of course with the bulk of our people, that where it happens to be subsidiary, it does not occur to them to mention it, and the enumerator is more often not too slack to enquire. But where agriculture is the principal source of livelihood, the other occupations specially if they happen to connote status are recorded fairly accurately. But here again the distinction between rent-receivers and rent-payers is not often perceived as to which is principal and which subsidiary, when recording facts for the census schedule. Rent-receivers number 6,787 workers. These are, as explained already, Inamdars. Jagirdars or other grantees of alienated land and rent-receiving Khatedars, who work their holdings through tenants or lessees. The rent-payers are cultivating owners who pay rent to government presumably and cultivating tenants who pay rent to them. The few unspecified entries have been grouped in this class. The class of labourers includes farm-servants and field-workers. Agents, estate-managers and employés of the clerical status engaged on the land are excluded from this category. Here also in regard to agricultural labourers, the proportion shown as working on non-agricultural occupations is an under estimate of the normal situation. But probably in some places most agricultural labourers were too busy on the land at the time of the preliminary record, to think of recording any other calling. Subsidiary Table V shows that one in 10,000 of agricultural labourers have shown working in Mills as a subsidiary occupation. This cannot be true as a good proportion of mill-hands are agrestic workers released from the land. Similarly the proportion of agricultural labourers shown also as village watchmen—which is 8 per 10,000, —seems also absurdly low. The majority of village watchmen have some interest in the land. The number of workers as village watchmen is returned as 2,494, and only 140 agricultural labourers out of 179,271 (workers) have returned this occupation as subsidiary. It seems that both these figures are inaccurate. The greater portion of village watchmen have been included in other entries in the Occupation Table and most of the agricultural labourers who are engaged in the watch and ward of rural areas have omitted to return this as their subsidiary calling.

PROPORTION PER MILLE OF AGRICULTURISTS WITH SUBSIDIARY OCCUPATION

Group	Subsidiary agricultural	Subsidiary non-agricultural	Total
Rent-receivers ..	18.8	91.6	110.4
Rent-payers ..	6.7	48.5	54.2
Labourers	0.8	15.6	16.4

444. Non-agricultural Occupations : Pasturage and the exploitation of Animals—It may seem to the reader that an undue amount of space has been allotted in the preceding paragraphs to the consideration of agriculture, as it is only part of one order out of 56, and comprises only 5 groups out of 191. But agriculture is really at the basis of all industries—all others, *e.g.*, textiles, being almost entirely dependent on its welfare. Transport is in other words merely the means for the distribution of agricultural produce and trade is largely concerned with the progress of this basic industry, " advancing with its advance and sharing its vicissitudes."

Pasturage and exploitation of animals is the next important group that we may take up. Pasturage has two main divisions, the raising of farm stock and the raising of small animals like bees, silkworms, etc. With the latter the State has

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hardly any concern. The raising of farm stock—chiefly cattle and buffalo breeding and keeping—supports 46,597 persons or 21·9 per mille. In 1911, the proportion maintained was 21 and in 1901, 21·6. From what we have known already about the availability of land in the different divisions, we naturally expect that North Gujarat with its large spaces of uncultivable soil where only grass will grow should support the largest proportion of persons by pasturage. The largest proportion of Rabaris whose traditional occupation is cattle-grazing is also found in that area. Kathiawad comes next with 26 per mille supported by pasturage; then the Southern and Central Divisions.

The number of persons supported by pasturage has increased by 10·3 per cent. in the decade. The Rabaris have increased by 11·4 per cent. in the same period. There is no doubt that the increase in the occupational head is real, but within the groups themselves there are great fluctuations. Cattle and buffalo breeders and keepers have increased by 8·3 per cent. but sheep, goat and pig breeders have declined from 9,740 to 1,624 or by 83·4 per cent. Herdsmen and shepherds have increased from 5,633 to 17,358. Evidently there has been some confusion in classification here. If we assume that the increase of 10 per cent. is shared by all the three sections alike, then there should be over 10,800 sheep and goat breeders now. Instead, the census shows only 1,624. The excess must have been absorbed in the increase, of 11,725 amongst herdsmen and shepherds, owing to confusion of breeding with grazing. Now the question is which distribution is correct. In 1911 and 1921, breeders and keepers of agricultural cattle were between 25,000 and 28,000. In 1901, they were only, 8,542. Herdsmen, shepherds, etc., in the last named year numbered 25,820, while in 1911, their strength dwindled to 5,633 and in this census, it rose to 17,358. From the Bombay Census Table of 1911 and 1901 it appears that generally the largest proportion of persons living by pasturage in British Gujarat consists of herdsmen, shepherds, goatherds, etc., the section engaged on breeding and raising of farm stock is much less. This is really the situation in this census also. It may be concluded that figures for 1901 show more or less the correct distribution, those for 1911 were only correct for sheep, goat and pig breeders and those for 1921 regarding herdsmen, shepherds and goatherds may be accepted as more correct than 1911.

Fishing and hunting engage only 2,719 persons of whom most are fishermen. We have seen in an earlier paragraph how Bhois and other fishing castes are giving up their traditional occupation for other callings. There is thus a decline of 2·7 per cent. since 1911.

445. Sub-Class III—Industry—We now come to the important orders (Nos. 6 to 18) which are comprised under Industry. The special Industrial Census, the results of which will be presently dealt with, gives the details for factory workers in each industry. From the special Industrial Census, the results of which are embodied in Imperial Table XXII, we have extracted the figures of the factory workers from the total employed in each type of industry. An attempt to estimate the strength of cottage-workers has been thus made in the above table. It may be mentioned in connection with the above figures of factory workers that in the special industrial census, certain skilled workers, like carpenters, or mechanics working in a factory, were included in the establishment of that factory, while in the general census, they would be perhaps returned according to their personal occupations. For this reason, the special industrial schedule contained provision for showing the particular personal

Order	Name of Selected Industry	Proportion supported per 1,000	Variation since 1911	Number of actual workers	Number of skilled and unskilled Factory workers	Number of cottage workers (estimated)
6	Textiles	27.6	+ 8.3	26,777	8,821	17,956
7	Hides and Skins ..	7.5	— 0.4	5,861	..	5,861
8	Wood	14.3	+ 26.9	10,965	..	10,965
9	Metals	7.0	— 8.0	4,975	48	4,927
10	Ceramics	13.2	+ 5.2	12,844	573	12,271
11	Chemical Products ..	5.3	+ 3.3	4,039	207	3,832
12	Food	3.9	— 37.1	4,126	289	3,837
13	Dress and toilet ..	21.4	— 0.3	18,677	..	18,677
15	Building	7.0	+ 15.0	6,259	143	6,116
18	Miscellaneous and unspecified including Industries of luxury	11.7	— 20.0	9,679	308	9,371
	All Industries ..	**119.2**	**+ 1.4**	**104,635**	**11,255**	**93,380**

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occupation of each skilled worker. Such cases of carpenters, mechanics, engine-drivers, cobblers, blacksmiths (but not weavers) have been deducted from the total of factory workers in the above table. There is the risk however that some of these factory employés may have been returned in the general occupation return under vaguer entries.* For this reason it is not possible to ascertain exactly the extent of persons employed on home industries by merely subtracting the factory workers from the total number of workers shewn in Imperial Table XVII. But *still the reader will be able to get a fairly accurate idea of the ratio of factory-workers* to the total. It may be said generally that one in nine industrial workers is employed in a factory, but in the textiles which are the chief concern of the factories in the State, the proportion of factory workers rises to just about a third of the total employed in that group. In 1911, one in 13 was so employed.

Of the 253,654 persons deriving their support from industry, 58,789 are textile workers and dependents ; 45,485 are tailors, barbers, shoe-makers and other persons engaged in Industries of dress and the toilet ; 28,120 are potters, brick and tile makers and other workers in ceramics and their dependents ; 30,349 are supported by industries of wood, *e.g.*, carpenters, basket-makers, etc., 14,869 are metal workers, ironsmiths, workers in brass metal, copper, etc., and their families ; 14,866 are brick-layers and masons and other people engaged in building industries ; and 24,899 are found in other miscellaneous and unspecified industries of whom the chief are sweepers and scavengers (10,188) on the one hand, and workers in precious stones and metals, etc. (6,294) and makers of bangles, beads, etc. of other material than glass and of spangles, rosaries, sacred threads, etc. (5,528) on the other.

Sub-class III is a large division comprising 13 orders and 79 groups. We can only notice the important orders and incorporate therein the main figures of the special enquiry into cottage industries, details regarding which are to be found in State Table XXIX. In considering variations, it will be necessary on occasions to refer to Sub-Class V—Trade—because as already mentioned the confusion has sometimes happened between makers and sellers of an article.

446. Order 6 : Textiles—24 per mille are supported by textiles in Central Gujarat, 46 per mille in the City, 33 in North Gujarat, 11 in South Gujarat and 34 in Kathiawad. In 1911, excluding the number of mill-hands, the home-workers on cotton, silk and other textiles numbered 20,088. In the table given in the preceding paragraph, 17,956 is the estimate of cottage workers in textiles in this census. The factory workers have increased from 5,740 to 8,821. Thus the decline in the strength of textile cottage industries has been chiefly due to the increase of large-scale establishments. In Subsidiary Table VII the total of persons supported by Textile shows an increase indeed of 8·3 per cent., but as the workers have declined, the increase is entirely among the dependents. The largest unit in the textile occupations is that of cotton sizing and weaving which supports 36,337 persons. Cotton ginning, cleaning and pressing support 11,649 persons (including 6,099 workers). From Imperial Table XXII it appears that cotton ginning and pressing factories employ 5,860 skilled and unskilled workers. The figures prove therefore what is the general impression that these preliminary processes of the cotton manufacture have almost entirely passed in the State from the hand-worker to factories using mechanical power. In 1911, there were 5,411 workers in all engaged in cotton ginning, cleaning and pressing, and 4,724 persons were also shewn in that year as employed in the ginning factories as skilled and unskilled workers. Cotton spinning has been in this census isolated from cotton sizing and weaving; and the result has been to show that women workers preponderate in the former, as the men do in the other. Industries connected with silk are not important. Dyers, calenderers, etc., and their dependents now number 4,365 as against 3,966 in 1911, but the workers have actually decreased from 2,036 to 2,024. I am surprised that the decrease is not larger, as Bhavsars, the representative calendering caste, are more and more taking to other occupations. The actual increase in the number of persons supported is therefore only apparent, and is explained by the fact that textile unspecified (group No. 38) now numbers 1,437 as against 1,887 ten years ago. State Table XXIX† shows

* Besides, the Industrial Census is not by any means a complete catalogue of factories—*vide* para. 456 later.

† It must be remembered that extracts from this table given in this and succeeding paragraphs do not include figures for the City of Baroda.

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details of handlooms, etc., connected with textile industries regarding cottage workers. These details are by talukas. In the margin the main figures are given by natural divisions. The very remarkable growth of spinning wheels in Kathiawad particularly in Amreli Taluka has a history. Mr. A. V. Thakkar of the Servants of India Society wrote a letter to the *Servant of India* which was quoted in the Bombay papers on the 27th June 1921. In this letter Mr. Thakkar described the result of an experiment carried on a large scale with a capital of about a lakh of rupees to see if hand spinning and weaving could be made remunerative. A resume of his letter—in his own words—is given below :—

COTTAGE INDUSTRIES—TEXTILES

Division	Number of handlooms	Number of handlooms with fly shuttles	Number of spinning wheels	Number of hand ginning machinery	Number of families engaged in dyeing and printing of cloth
Central Gujarat ..	2,940	100	1,098	265	103
North Gujarat ..	5,291	109	1,059	302	487
South Gujarat ..	1,205	..	336	58	66
Kathiawad	1,132	11	9,551	885	93
State (excluding (City)	10,568	220	12,044	1,510	749

Cotton of the *Mathia* variety, which is shortstapled and is the cheapest available in this country, is grown in abundance in the southern half of the province and is considered best for making coarse cloth. Kathiawad is a poor province comparatively and the Charkha has not yet died out there. It was therefore considered to be the best place for the experiment.

Over 5,000 Charkhas* are now at work at 25 centres, a quarter of them being supplied to the spinners by the promoters of the experiment, and the rest being supplied by the spinners themselves. Cotton is regularly supplied and yarn collected at the different centres by paid agents. The spinners mostly belong to the ordinary cultivating class and the lower middle class and earn at the rate of about two annas a day. They are all women and are not in a position to go out to earn a livelihood. Some of them are Purdah women, who will not stir out of their homes. However small the income may appear to be, they feel it a great boon and bless the soul that has revived the spinning wheel. It must be borne in mind that it is only a supplementary income. Two annas a day may not be much, but it is better than nothing to these poor people.

Carded cotton is supplied to spinners, carding costing about an anna per lb. which brings about Rs. 2 per day to a carder of ordinary strength. The yarn is given to the village weavers who are exclusively members of the Dhed community for the ordinary weaver has not yet overcome his objection to weave hand-spun yarn, on the score of its being uneven and breaking often thus requiring a longer time to weave than the mill made yarn. The weaver gets four to five annas a lb. whereby he is unable to make about a rupee a day. The Khaddar that is produced is sold either locally or in Bombay. The percentage of local sale at present is small, but it is hoped that in the near future by little advertizing most of the Khaddar produced will be consumed in the province. A maund of 40 lbs. of ginned Mathia cotton costs at present about Rs. 9 and the same quantity of cotton turned into cloth (about 31 lbs.) costs about Rs. 32. Of this Rs. $2\frac{1}{2}$ go to the carder, Rs. $6\frac{1}{2}$ to the spinner, Rs. $10\frac{1}{4}$ to the weaver and Rs. $3\frac{3}{4}$ for supervision and miscellaneous charges. The Khaddar costs about seven annas a yard by 27 inches. The whole business is conducted on commercial and not on philanthropic lines but no profits are earned and the Khaddar is sold at cost prices. At present about 80,000 rupees are employed in capital expenses and during the last month over Rs. 20,000 in all were distributed in wages to the different classes of workers. It is hoped to extend the business after the rainy season. Spinning is the least remunerative of the three operations, but in spite of that, scores of women come every morning, some from distances of four to six miles, and some have to be sent back without cotton, as the yarn selected cannot be woven as fast.

447. **Orders 7-9: Hides and Skins, Wood, Metals**—Industries relating to hides and skins and hard materials from the animal kingdom support 15,964 persons (5,861 workers) as against 16,032 persons (6,454 workers) in 1911. These leather workers are generally Dabgars who turn out trunks, water-bags, scales, etc. and Chamars who are tanners, curriers and leather dressers. Shoe-makers (Mochis) are treated separately under the scheme in Order 13—Industries of dress and the toilet. The leather industry (the actual process of tanning and the preparation of

* This was written in July 1921, and refers to the additional *Charkhas* established. In Kathiawad there was already a large number in existence before the experiment started.

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leather articles for village use) has not yet emerged in this State in factory shape. But sooner or later, the cottage industry with its primitive processes of tanning will give away before the capitalist and his machine. Under modern industrial methods, there is no necessity now "of retaining hides and skins for a protracted period subject to the slow action of some vegetable tanning material; rapid chemical methods (*e.g.*, the chrome process) by mineral salts and even aided by electricity have been called into existence and adopted with avidity by the trade".† The decline in the number of persons supported by tanneries is therefore natural. State Table XXIX gives details of tanneries by talukas. The figures have a remarkably close correspondence to the number of workers on leather.

Division	Number of tanneries
State (Excluding City)	**5,584**
Central Gujarat (Excluding City)	1,930
North Gujarat ..	2,833
South Gujarat ..	534
Kathiawad	287

Industries of wood support 30,349 persons of whom 21,825 or 72 per cent. subsist as carpenters, turners and joiners, 2,225 are sawyers and their dependents, and 6,299 are basket makers and makers of leaf-plates, etc. Sawyers and carpenters have increased by 14·7 per cent. since 1911. The Sutar caste has increased only by 8 per cent. in the same period. Sutars and Kharadis are not only carpenters and turners but they are house-builders, furniture-makers and even carriage-builders. In these respects (groups 89, 83, 84, 91) there is a large decline since 1911. Furniture industries inspite of the establishment of new and thriving furniture factories show only 60 persons supported in the Occupation Table, while Industrial statistics show 89 skilled and unskilled hands employed in the three furniture factories alone. The figures of 1921 are therefore suspect: the real variation in these industries could not have been larger than the increase in the Sutar caste itself.

Basket makers and makers of leaf-plates, *datans* (tooth-sticks), etc. are a peculiar feature of Indian occupational returns. Buruds and Vansfodas follow basket making as their principal occupation and Bhangis also take to it as a secondary means of livelihood.

From the State Table XXIX we extract the marginal summary of cottage industries relating to wood and basket making. The largest number of furniture factories of the cottage type is in Vijapur, Petlad, Patan and Dehgam talukas. The art of ornamental wood carving now a dying industry, is still found in Vaso, Sojitra, Visnagar, Patan and other places. Wood carving as a feature of house decoration is fast going out of fashion.

COTTAGE INDUSTRIES IN WOOD

Division	Number of cabinet factories employing 2 Sutars or more	Number of basket making families
State (Excluding City)	**1,090**	**2,083**
Central Gujarat (Excluding City)	312	925
North Gujarat	515	625
South Gujarat	144	336
Kathiawad	119	197

Of the 14,869 metal workers, 11,972 deal in iron and 2,089 are workers in brass, copper and bell-metal. These industries do not include precious metals which go to group 98. The iron workers have declined by more than 20 per cent. Brass, copper and bell metal workers have declined by 5 per cent. In Order 9—Metals—there is a general decline of 8 per cent. The relevant extracts from State Table XXIX concerning metal industries are shewn in the marginal table.

METAL INDUSTRIES

Division	Number of iron foundries worked by 2 or more Luhars	Number of families working in brass	Number of families working in bell metal
State	**1,036**	**252**	**134**
Central Gujarat (excluding City).	186	42	17
North Gujarat ..	625	153	95
South Gujarat ..	99	28	19
Kathiawad	126	29	3

The Luhar caste forms the bulk of the village blacksmiths. Its strength has declined slightly by 0·3 per cent. This decline may be coupled with the fact that Luhars following their traditional occupation of iron, who formed 60 per cent. of their

† *Vide* Professor Radhakamal Mookerjee's *Foundation of Indian Economics*, p. 217.

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total in 1911, now only form 56. Kansaras are the chief workers in copper, brass and bell-metal. The brass-ware turned out at Visnagar is much admired. Coppersmiths are found in most towns except Sidhpur, where according to tradition no copper is supposed to melt. Vohoras are chief workers in tin, zinc, etc.

448. **Orders 10-13: Ceramics, Chemical products, food, dress and toilet**—The most important groups in these occupations are shewn in the margin. Except Darjis (tailors, etc.) who have apparently thriven and manufacturers of vegetable oil who show slight gain, all the other industries in these orders show fairly big decreases. The Kumbhar caste has indeed increased, but its attachment to its ancestral calling is diminishing as shewn by the fact that whereas 68 per cent. followed it in 1911, only 60 follow it now. Indeed the scope for this industry is gradually disappearing. Enamelled iron-wares have invaded where the articles turned out by the potter held sway, in the household and the kitchen. Chinaware is now increasingly found in the richer households. The Patent lanterns are replacing earthen lamps; and in various ways the potter finds his occupation losing its old market. Hindu superstition and custom also hinder any high artistic development of the potter's work. Pots etc. are usually broken whenever polluted; certain ceremonies also prescribe their destruction on occasions like an eclipse or death in a family; there is therefore always a constant demand for a cheap type of material for which the less efficient Kumbhar will seek to cater. No demand exists to any large extent for higher and more artistic varieties of the Potter's art. The better artisans amongst the Kumbhars are seeking therefore more lucrative outlets for their talents. Some have taken to carpentry: others try their hand in masonry; a few more daring have ventured on the land. These sub-castes consider themselves superior to the Kumbhars and have begun to despise their old profession.

IMPORTANT GROUPS IN ORDERS 10–13

Name	Number supported	Variation per cent since 1911
Potters	24,391	— 4·9
Barbers, hair-dressers, etc.	18,471	— 6·7
Tailors, milliners, etc ..	15,527	+ 12·5
Manufacturers of vegetable oil	10,890	+ 2·4
Shoe-makers, etc. ..	8,258	— 0·8
Rice pounders, etc. ..	3,959	— 26·0

Tailors and milliners etc. have increased largely. The Darji caste shows, as already pointed out, the very high proportion of 96 per cent. following their ancestral profession as tailors. The Darjis have increased by 7·5 per cent. Manufacture and refining of vegetable oils are the most important occupations in Order 11—Chemical products. The oil-pressers are of the Ghanchi caste (who have Hindu and Musalman sections). They have declined slightly in the decade. Modern methods have affected the old processes of oil-pressing only very slightly at Bilimora and other places. Barbers and hairdressers have declined. The Hajam caste has indeed increased slightly (by 3 per cent.) but the proportion following the traditional occupation of barbers has declined from 73 to 65 per cent. The Shoe-makers have declined slightly while the Mochi caste has increased by 2 per cent. The Rice-pounders are traditionally recruited from the Golas, who have increased by 0·3 per cent., but the proportion following this business has declined from 56 to 49. This circumstance however only partly accounts for the big drop of 26 per cent. amongst rice-pounders. Rice pounding, I take it, is more and more becoming a domestic occupation of females who attend to such requirements themselves without having recourse to the professional rice huskers and pounders. Probably also the contraction of rice as an article of diet is a contributory. The growth of rice mills in Navsari *Prant* and the City further explains why the cottage workers in rice pounding and husking in these two parts have largely declined.

The statistics regarding cottage industries pertaining to these orders are extracted from State Table XXIX and given in the marginal statement. The potters are most numerous in Kadi *Prant* in the Patan taluka of which a little artistic sense in the earthenware designs still survives.

COTTAGE INDUSTRIES IN EARTHENWARE, CHEMICALS AND FOODSTUFFS

Division	Families of potters	Number of oil pressers	Number of cream separators	Number of dairies for ghee and butter	Number of fisheries	Number of Sugarcane pressers
State (excluding City)	**6,470**	**2,475**	**59**	**8**	**1,031**	**384**
Central Gujarat (excluding City) ..	1,262	787	49	2	32	13
North Gujarat ..	4,063	1,240	7	6	4	25
South Gujarat ..	700	199	3	..	851	200
Kathiawad	445	249	..	..	144	146

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South Gujarat and Kathiawad being near the sea naturally possess the largest number of fisheries. The sugar-cane pressers in SouthGujarat are mostly confined to the garden land in the Rasti tract—covered by the Navsari and Gandevi talukas. Regarding tailoring families, we learn from State Table XXIX that there are roughly 27 workers and 11 sewing machines per 10 tailoring families. The number of sewing machines and tailoring families is the largest in South Gujarat proportionately to its population.

TAILORING FAMILIES AND SEWING MACHINES

Division	Number of workers amongst tailors, milliners, etc.	Number of tailoring families according to State Table XXIX	N mber of sewing machines
State (excluding City) ..	**7,024**	**2,625**	**2,810**
Central Gujarat (excluding City)	1,307	608	676
North Gujarat	3,830	986	952
South Gujarat	1,210	745	872
Kathiawad	677	286	310

449. Order 15 and 18—Building Industries; goldsmiths, etc., scavengers.—We have space for consideration of only two other orders under Industry. The building industry—consisting of lime-burners, masons, bricklayers, stone-carvers, housepainters etc.—now supports 14,866 persons, as against 12,931 persons in 1911, showing an increase of 15 per cent. Stone-cutters, dressers, bricklayers and masons have increased by 31·5 per cent. Bricklayers (*Kadias*) are largely from Kachhia, Sathawara, and Koli castes and these have shewn large increases. Besides, this occupation has received a large accession of recruits from the Kumbhars—the special caste of Kadia Kumbhars showing an increase, chiefly in Amreli *Prant* from only 45 to 1,762 in the last ten years. The savings from war-profiteering led towards the end of the decade to a boom in the building trade, and old-fashioned houses were quickly overhauled to give place to more modern structures. Earthen-built huts are fast giving place to more substantial habitations, and in Kathiawad where stone is cheap, stone masons have continued to supply a constant and even increasing demand for their talents. The largest increases in the building industries have occurred in North Gujarat and Kathiawad, where the wages have risen from 12 or 14 annas in 1911 to Rs. 1-8 or even Rs. 2-8 daily now.

Order 18 contains the miscellaneous and unspecified industries—from printers and lithographers, engravers, makers of musical instruments, workers in precious stones and metals to contractors of refuse matter and even sweepers and scavengers. The workers in precious stones and metals (including goldsmiths and silversmiths like Sonis and Jadias, and precious stone-sellers like Panchigars) number 2,644 workers and 3,650 dependents. In 1911, they numbered 10,158 in all (3,574 workers and 6,584 dependents). The decrease is partly explained by the increase under trade in precious metals (Order 39—group 148) where the total of persons supported has risen from 1,759 in 1911 to 2,459 in 1921, and partly also by the fact that in 1911 only 13 persons were supported by the making of bangles of other material than glass, and of sacred thread, and rosaries. This figure cannot be right. In 1901 there were 2,669 persons in this last named occupation and there are 5,528 now. Accepting the figures of 1901 and 1921, we must assume that the 1911 figures by groups in this order were not correct. The workers in gold and other precious metals must have really increased. The Sonis have increased by 8 per cent.—and the proportion among them following their traditional occupation has remained the same. I conclude that the variation in this group of occupation has corresponded to the rate of increase in the Soni caste. The desire for ornaments amongst Indian women is so ingrained that it can resist even the severest strain of economic pressure, particularly as the articles themselves form a convenient reserve of easily realisable capital. A poor man's bank is his wife, as it has been truly said.

"In recent years," as Prof.Radha Kamal Mookerjee points out, "the deterioration of tastes has also affected the goldsmith's art, though this is the art which has suffered least of all. The women, who are more conservative, still adhere to their traditional ornaments, and have not favoured European jewellery. In some of the towns, however there has been imitation of the patterns that appear in the trade catalogues of Birmingham and Paris."

From goldsmiths to scavengers it is a far cry, but the order is comprehensive enough to include both. In the present occupational scheme contractors for the disposal of refuse (who may be under present conditions high-caste Brahmans)

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have been isolated from sweepers and scavengers. These latter consist of 5,010 workers and 5,178 dependents or 10,188 in all, forming group 103. This group is so clearly marked that there should have been little chance of any mistake in this regard. The occupation is unclean and is only limited to Bhangi and allied castes. In 1911, there were 19,590 sweepers and scavengers, and dust and sweeping contractors (including 11,008 workers). The census figures would thus mean a serious decline of 48 per cent. If the figures are true this is ominous as portending disastrous sanitary consequences in rural areas. But there is reason to believe that the 1911 figures were not correct. It is safe to assume that only Bhangis and Shenvas will do this work and no other caste. The total number of workers amongst them in 1911 (asapearp ing in Imperial Table XVI of that census) following this occupation was only 6,832, as against 11,008 workers in scavenging and sweeping shown in the general Occupation Table. On the whole the former table, as dealing with more general heads of occupation is less complicated and therefore more correct. In 1921, the number of workers amongst Bhangis and Shenvas doing this business was shewn to be 6,554. Thus the general Occupation Table of 1921 in this respect makes a closer approximation to the truth. Going however on the figures of the occupation by caste return, we find that the decline amongst the sweepers and scavengers is reduced to only 4 per cent. Even this decline is a serious matter. In most villages, the sanitary services are very much undermanned. As the Economic Development Committee Report of this State (1918-19) pointed out: "Every village has on its servants staff a few sweepers (Bhangis) but they are mostly used as messengers and labourers. They sweep the streets only at long intervals."

450. **Sub-Class IV—Transport**—This Sub-Class maintains 27,954 persons in the State. Transport by water, which is mainly conducted in rivers and on the sea-coast by boats, supports 3,015 persons now, against 1,861 ten years ago. The increase is partly accounted for by the appearance in the new classification of the class of labourers in docks and harbours (294 persons) who previously must have been for want of such a head included under "General labourers (unspecified)." Transport by road maintains 8,897 persons (3,931 workers) as against 5,966 in 1911. Porters and messengers have increased by nearly 2,000 Owners and managers, drivers, coachmen, etc., of vehicles have increased with their dependents from 4,534 to 6,068. The opening of new railway stations has encouraged the growth of hackney carriages and carts. There are nearly 300 such in the City, and hackney carriages in Navsari, Amreli, Patan and other large towns are numerous and increasing. Trams used to ply in the City, but now after having served their purpose of widening the streets have disappeared; and in their place, several motor buses do a thriving business. Motor lorries have increased. Motor cars have multiplied in the City and have even appeared in Navsari, Dwarka and Amreli towns. Transport by rail shows the largest increase from 6,458 persons supported (2,729 workers) to 14,499 persons supported (5,853 workers). Both workers and persons supported have more than doubled. The mileage of Railways has, as shewn already in para 50, also doubled from 295 miles in 1911 to 567 in 1921. Post, Telegraph and Telephone workers and their dependents have declined from 2,359 persons supported (1,277 workers) to 1,543 (586 workers). In Subsidiary Table X are given details of persons employed in Post and Telegraphs and also in the Railways as furnished by these departments. These figures may be compared with the total of actual workers returned in the census. They generally correspond. The smaller figure amongst construction coolies in the departmental returns is due to the fact that these returns were only received from the B. B. & C. I. Railway and allied railways and did not include the coolies engaged in the lines that were being constructed under the State agency. The smaller figure amongst postal employes in the census return is because some postal clerks have occasionally described themselves vaguely and were therefore included in group 185.

Kind of employment	Figures of actual workers in Census Return	Figures of persons directly employed in departmental return
Railway employes ..	4,554	4,561
Coolies and regular employes of contractors ..	1,299	756
Post	586	771
Telegraph and Telephone.		4

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451. Sub-Class V—Trade.—This sub-class is concerned with the industries of exchange. In this State as elsewhere in India, the division of labour, as connoted by the differentiation between preparation of material substances and their exchange, does not exist to any great extent. In India, unlike Europe where the seller is almost invariably a middleman, the maker of the article is usually its seller; being already classified under the head of industry, the Indian seller is left out of the commercial head. In rural areas and even in towns largely, there is also this difficulty in classifying commercial operations that shop-keepers do not specialise in any one commodity. Oil sellers will also deal in grain. Money lenders sometimes vary their pleasant transactions with dealing in piece-goods. The miscellaneous store dealing in a variety of goods (excepting grain) is a feature in the rural economy. These shops are known as the *maniarani dukan*, corresponding to the *manohari dukan* of Bengal.

These uncertainties are in the way of any proper and detailed analysis of the figures of distribution and of variation under this sub-class. Under these circumstances a bald summary of the figures can only be given. Of the 141,016 persons supported by trade, 15,751 are included under Banks, establishments of credit, exchange and insurance; 13,875 are engaged in trade in textiles; 30,300 are grain and pulse dealers and their dependents; 16,416 are supported by sale of cardamoms, betel-leaf, vegetables, fruits and areca nut; 3,118 live on the sale of tobacco, opium, ganja, etc.; 5,995 are dealers and hirers of elephants, camels, horses, cattle, etc.; 2,459 are dealers in precious stones and metals; 2,684 are vendors of wine, liquors, aerated waters and ice and 1,341 are owners and managers of hotels, cookshops (*vishis*), serais, etc. and their employes and dependents; 4,898 are supported by grocery and sale of vegetable oil, salt and other condiments; 2,034 are maintained by sale of sweet-meats, sugar and the like and 3,801 by that of milk, butter, ghee, etc. Under miscellaneous (Order 40) are comprised the general storekeepers and shopkeepers otherwise unspecified (group 152) numbering with their dependents 5,152, and itinerant traders, pedlars and hawkers (5,734). Altogether the Sub-Class of Trade is divided into 17 Orders (from Order 24 to 40) and 34 groups (from Groups 121 to 154 both inclusive). In the thirteen groups enumerated above 83,258 or 59 per cent. of the total of the Sub-class are comprehended. The last group under trade is generally termed "Other trade (including farmers of pounds, tolls and markets)" and in it 14,759 persons or 10·5 per cent. are included. The variations since 1911 both in absolute and proportionate figures are given in the marginal statement. The large drop amongst "Other traders," explains the increase under itinerant pedlars and traders and also in part to the gain in grain and pulse dealers. The increase amongst textile traders possibly accounts for part of the decline in textile cottage workers mentioned in para 446 above. The increase amongst tobacco, ganja and opium sellers is perhaps real. There is indeed a decrease in the number in the corresponding industrial head, but taken together (industry and sale), tobacco, opium and ganja show an increase of 38 per cent. which may be taken as the true extent of the variation. Sellers of sweetmeats, etc. when combined with preparers of these articles of food show only an increase of 26·3 per cent. Bankers and money lenders show a decline of 10·5 per cent. Possibly this is a credit to the co-operative movement amongst agriculturists. Banking business of the modern type has developed through the Bank of Baroda and its numerous branches. The old *sarafi* system of credit is gradually falling into desuetude. But another good reason for this decline is that many money-lenders who are grain-dealers as well have returned themselves in the latter capacity. A money-lender is a kind of an octopus who has spread his tentacles into many directions

Order	Group	Name of Occupation	Variation per cent. since 1911	Variation in absolute figures
24	121	Bankers, money lenders, etc.	— 10·5	— 1,849
26	126	Traders in textile ..	+ 24·7	+ 2,744
32	130	Hotel keepers, etc. ..	+ 18·7	+ 635
33	132	Grocers and sellers of vegetable oil, salt, etc. ..	+ 7·5	+ 342
,,	133	Sellers of milk, butter, etc.	+ 17	+ 552
,,	134	Sellers of sweetmeats, etc.	+ 219·3	+ 1,397
,,	135	Cardamom, betelleaf, etc. sellers	— 7·8	— 13
,,	136	Grain and pulse dealers .	+ 27·0	+ 6,434
,,	137	Tobacco, opium and ganja sellers	+ 72·2	+ 1,307
39	148	Dealers in precious stones and metals	+ 39·8	+ 700
40	153	Itinerant traders, pedlars, etc.	+ 1,955·2	+ 5,455
,,	152 and 154	Other traders (including general storekeepers), farmers of cattle pounds, etc.	— 29·0	— 8,120

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in the village society. Change in the monetary system in the State has led, as Mr. Govindbhai pointed out in the last Report, to the disappearance of money changers and testers who with their dependents numbered 10,479 in 1901. These took to grain and pulse dealing which since 1901 has increased by 56·7 per cent. and other similar substitute professions.

452. Sub-Class VI—Public Force—This sub-class includes the Army (Imperial and State), the Police force and the village-watchmen. Except as regards the last named, the record is fairly accurate. Altogether 23,228 persons (10,579 workers) are supported by this sub-class. Of the 10,579 workers, 4,088 are in the Army, 3,997 are in the Police and 2,494 are village watchmen. The strength of the last named is in reality larger, there being 2,902 villages, counting at least two for each village, there should be nearly 5,000 village watchmen if not more. Many of them who are also agriculturists have presumably returned themselves as cultivators. Since 1911, the Army effectives and their dependents decreased from 11,560 to 7,825 or by 32·3 per cent. The strength of the Police force and their dependents has remained almost at the same figure, showing only a slight increase of 0·4 per cent. The number of village watchmen and their dependents has also remained stationary. The Imperial Army had 1,009 representatives in 1911; in 1921, there were only 121. Shortly before the Census, there was a large exodus of nearly 600 men from the regiment at the Camp, near the City, which accounts for the decrease.

453. Sub-Class VII—Public Administration—Public Administration includes service of the State in the general line but does not include professional men—doctors, educationists, engineers etc.—in the State employ. These are grouped under their respective heads with independent members of their professions. Public Administration supports 41,473 persons against 38,217 in 1911, showing an increase of 5·6 per cent. The workers have increased from 14,137 (137 women) to 14,806 (807 women). The increase is due to the growing complexity of the administration of the State, the growth of the size of public offices and the creation of new establishments. Imperial Table XXI gives details of servants in the State employ according as they are gazetted officers or clerks and subordinates. The chief castes and races having the largest number of gazetted officers are shewn in the margin. The figures for two censuses are given for comparison. The Nagars, Marathas, Anavalas and Lewa Patidars have the largest share in the administration, the Deccani Brahman element having steadily dropped off from the higher ranks.

CASTE AND RACE OF GAZETTED OFFICERS

Caste	Number of officers (actual workers)	
	1921	1911
Anavala	61	31
Konkanastha ..	36	189
Modh	24	17
Nagar	72	49
Lewa Patidar ..	89	53
Kadwa Patidar ..	28	3
Maratha	72	53
Rajput	27	11
Pathan	52	13
Shaikh	21	8
Parsi	12	17
European and Anglo-Indian	12	12

454. Sub-Class VIII—Professions and Liberal Arts—Under this head are comprised five orders and fifteen groups. Altogether 29,206 workers (4,543 women) and 40,853 dependents are supported by these occupations. In the margin the strength of the four groups and the figures for actual workers are given, with the variation in persons supported since 1911 also indicated.

PROFESSIONS AND LIBERAL ARTS

Order No.	Name of Order.	Strength in 1921	Number of actual workers in		Variation per cent. in persons supported since 1911
			1921	1911	
46	Religion	43,367	18,635	24,890	— 16·6
47	Law	2,074	537	440	+ 24·2
48	Medicine	3,580	1,240	1,182	+ 16·3
49	Instruction ..	13,514	5,590	4,326	+ 43·8
50	Letters and Arts and Sciences.	7,524	2,984	3,419	— 12·1

As to religion, the total of that order shows a decline of nearly 17 per cent. Priests and ministers have decreased by over 50 per cent. or nearly 9,700 persons. Religious mendicants, etc. have increased by 141·5 per cent. or by 10,096 persons.

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Presumably there has been some confusion between the two groups. In 1901, the number of priests was 25,732. In 1911, the figure jumped for apparently no real reason upto 39,101. I suspect the correctness of the last census figure for priests. The Brahman castes are all showing a progressive tendency to forsake their priestly functions ; so are Saiyads amongst Musalmans. There could have been no reason for any sudden accession of their strength in 1911. The total decline since 1901 in priests and ministers is 24·6 per cent. Assuming a decline of 12 per cent. to be true for 1911, I estimate the true strength of priests and their dependents in that year to be about 22,600. As to religious mendicants, there is always the likelihood of their figures interchanging with ordinary beggars and vagrants. The religious mendicants and their dependents in 1911 numbered 7,137. If we take out from the number of priests, the excess of 16,501 (39,101—22,600), as being erroneously included in 1911 and add it to the religious mendicants, and then add the beggars and vagrants total, we get as in the margin the combined figures for the last three censuses. It must be however remembered that for the years 1901 and 1911, the beggars and vagrants total also includes prostitutes, procurers and such like. We thus see that there has been a progressive decline in the ranks of these parasites. The last twenty years have been a strenuous period of agricultural scarcity and tightness of money. As a consequence the wells of private charity are drier now than ever before. The distinction between religious mendicants and the ordinary beggars although it has its use from the point of view of status has little significance from the point of view of evaluation of wealth. Both are parasitic occupations and thrive where private charity is unorganised and only moved by superstition or sentiment.

Year	Total of religious mendicants, beggars and vagrants combined	
	Number	Variation per cent.
1901 ..	44,174	....
1911 ..	32,095	— 27·3
1921 ..	26,104	— 18·7

Law and medicine have both got a large accession of their votaries. The increase amongst doctors, midwives, etc. (actual workers only) is much smaller—less than 5 per cent. than the increase in persons supported by these professions. The same is true though to a less extent of lawyers. Evidently the dependents have increased more largely than workers. The increase amongst lawyers should really be higher : year after year, a large number of young men is passing out as graduates in law or otherwise qualified to practise as lawyers. The increase amongst medical practitioners is due in some measure to extension of village medical relief within recent years. The influenza epidemic while it roused the social sense of the people to the alleviation of human suffering also woke them to the question of the adequacy of village medical relief. A committee appointed by the Government soon after the epidemic have indicated the minimum measures to be undertaken. The scheme provides for 35 new dispensaries. A five-mile radius for the distribution of medical relief is the ideal to be worked up to. A cheaper type of dispensary than the taluka hospital is to be established at convenient centres and maintained on a system of joint contribution of people and state. On this basis, up to July 1920, 13 new dispensaries were opened and it is believed that the full number of 35 will be soon worked up to. These added to the 60 old institutions will afford relief to 22,384 persons per each hospital. The area circle of each hospital will then be 85·5 square miles or roughly two or three hospitals per taluka. Besides these dispensaries on the Western model, several villages have been fitted with small Ayurvedic dispensaries where indigenous drugs are distributed *gratis* to the suffering public. An Ayurvedic College on a more ambitious scale is planned at Patan.

Instruction shows a large increase of 44 per cent. The increase amongst workers is however only 29·2 per cent. The general result of the policy of consolidation recently pursued in the Education Department is the provision of additional teachers to the existing schools. The one-teacher schools are being gradually strengthened with two or even three teachers on the staff. The actual increase in workers is 1,164 persons. The women workers in education have increased from 179 to 430. The facilities for training women teachers are thus increasingly availed of. " Letters, Arts and Sciences " are a composite herding of occupations—ranging from authors, journalists, architects, engineers, etc., to conjurers, acrobats, fortune tellers, astrologers and even dancing girls. The present classification is an improvement on the 1911 one—editors and journalists being brought over from Industry and classed with authors and artists. Conjurers and acrobats, fortune tellers, reciters and exhibitors of curiosities and wild animals used to be under " Trade of other

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sorts" with shopkeepers, itinerant pedlars, etc. They have now been brought over and put in a separate group of this order. The marginal table shows a decrease of 12·1 per cent. on the unadjusted figures, but if we make the above adjustments, we find that the total number of persons supported in 1911 in this order as at present constituted was 9,671. Thus the rate of decrease is raised to 22·2 per cent., instead of 12·1 as shewn above. Architects, surveyors, engineers, are now half of what they were in 1911. Authors, editors, journalists, etc., have increased in actual workers from 193 to 534. Music composers, masters, singers, actors and dancers have declined from 5,607 (2,259 workers) to 4,239 (1,854 workers). The Targalas who are traditionally associated with acting and singing have found this State an unprofitable theatre for their activities and have largely emigrated. The dancing girls have also declined from 238 to 169.

455. **Sub-classes IX-XII.**—These sub-classes are comprised under Class D and support 156,788 persons. The largest item of these is Sub-class XI—" Insufficiently described occupations"-which absorbs 125,622 persons (59,612 workers). This sub-class has four groups classified according to the nature of their work and their status—*entrepreneurs* and manufacturers form the first group (404 workers); then come cashiers, clerks and employes of a like status (16,265 workers); skilled workers (mechanics otherwise unspecisfied) follow, with general labourers (42,828 workers) at the end. Generally as already mentioned this sub-class now forms a smaller proportion of the population than in 1911; but vague entries of the first kind now occur 1,227 times, while there were none in 1911, and those of the second kind have increased from 26,354 (11,469 workers) to 38,718 (16,265 workers). General labourers have on the other hand shrunk from 115,813 to only 85,478.

Domestic servants have increased from 1,237 male and 595 female workers to 1,955 male and 2,849 female workers in this census. The increase in female workers is significant. The figures of occupational distribution of females by castes for two censuses is an interesting index of the pressure of changing times. Here are some castes selected amongst which the number of female workers in domestic service seemed large. With these the corresponding figures of 1911 are compared. In every case there is a significant increase, particularly amongst the Brahmans and Rajputs. Perhaps the increase amongst Marathas is due to the inclusion through error of Maratha Kanbis amongst the number.

Name of Caste	Number of domestic servants among females in	
	1921	1911
Audich Brahman	111	6
Khedawal ,,	82	8
Modh ,,	31	30
Maratha ..	175	4
Rajput	60	2
Soni	32	4
Shrimali Jain ..	61	5

Persons living on their income number with their dependents 11,584 in this census. In 1911, they were 8462. The increase is due to the larger number of pension holders amongst retired government servants residing in the State. The actual receivers of pensions, cash grants and other non-agricultural incomes have increased from 3,220 to 4,309.

Lastly there remain the disreputable occupations. The largest item of these—beggars and vagrants—has been already considered. In this census, prostitutes and procurers were for the first time isolated from beggars and vagrants. Only 74 persons supporting 19 dependents have returned themselves as prostitutes and procurers. I am afraid I cannot join in this certificate of virtue. Baroda City returns only 45 of these women, while Navsari *Prant* returns a clean bill, although it is well known that Navsari town has part of a long street filled with them. The dancing girls of course apart from the use to which they put their talents are only a shade removed from this ancient profession. Under the peculiar social circumstances of Gujarat where a certain not inconsiderable amount of clandestine vice obtains an accurate record of prostitution is out of the question.

Statistics of Factory Industries

456. **Imperial Table XXII: Industrial Census how taken?**—In the census of 1901, an attempt was made,as mentioned already, to distinguish between factory and home-workers. The distinction was not well-remembered by the enumerators and the statistical results obtained were neither complete nor reliable.

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In 1911, it was decided therefore to have a special industrial census for the purpose of obtaining and setting out accurate figures for the number and kind of factories, the details of management and labour and the state of trade. The minimum unit then taken was the industrial establishment employing at least 20 persons. The information then asked for concerned the kind of factory or mine, the name and caste or race of owner and manager, the sex distribution of workers, the differentiation of the skilled and unskilled labour, and the condition of the factory at the time. In the present census, the information to be collected was expanded into two schedules. Schedule A was similar to the special Industrial Schedule of the last census. But the questionnaire was a little more elaborate in some directions ; in regard to the state of industry, the elaborate sevenfold division in 1911 of " much brisker," "brisker," " somewhat brisker," " normal," " somewhat slacker," " slacker," and " much slacker " imported a degree of refinement in differentiation which was not within the capacity even of the industrial managers ; nor was it possible for obvious reasons to get managers and labourers of the weaker factories to admit truthfully the state of their trade. For this reason, the questionnaire on the present occasion only contented itself with asking whether the particular factory worked throughout the year, or was merely seasonal in its activities. For the rest, the Schedule's inquest was more searching and it cast its nets wider on this occasion with a view to include all industrial establishments which employed between 10 and 20 persons. The type of organisation was to be described in detail ; the kind of power (steam, oil or electricity), the number of engines according to their horse power, the source of electric supply, the number and horse power of prime movers and the number and power (in Kilowatts) of electric dynamos. In the case of textile establishments, details of the number of looms in use, and whether they are worked by power or by hand, were to be returned. Schedule B was new and designed to secure data regarding the skilled and unskilled hands as distinguished from the supervising or the clerical staff. The heads of information required were besides name, sex and age, the race or caste, birth district, whether skilled or unskilled, and lastly the personal occupation of the skilled. This Schedule B was in some cases difficult to fill, but every assistance was rendered to factory owners and managers in the filling of the entries.

The preliminary step in this Industrial Census was to prepare a register of industrial establishments per each mahal. Two lists were prepared in this State—one containing the names and addresses of factories using mechanical power or working by hand, which employed not less than 10 paid employes and workers ; and the other containing the number and a few other broad details of the hand-worked establishments employing 10 paid workers and over, and also of all industrial establishments, whatever the size, which used some form of mechanical power. These two lists were then scrutinised by the Director of Commerce and Statistics, who compared them with his own departmental returns. After this was done, the schedules were distributed with letters of authority from the Census Superintendent through the Mahal Charge Superintendents to all the owners and managers of factories contained in the first list. From the second list, a general table was compiled by the Director of Commerce, of which an abstract by divisions will be incorporated presently.

457. **Limitations of the Return**—An industrial establishment for the purpose of the schedule is thus defined to be any premises wherein, or within the precincts of which, ten or more persons are employed on separate remuneration in any process for making, repairing, ornamenting, finishing or otherwise adopting for use, for transport or for sale any article or part of an article. It does not include such industries as are carried on by members of a household in their joint interest with less than 10 hired labourers. This definition excluded many large cottage establishments, *e.g.*, of weaving, tailoring or oil and rice mills, where the members of the household share in the labour of their hired workers. The period of the enquiry was extended from the 1st March till the 15th April. The later rains in some places put back the work of ginning factories and presses from January—February to even April or May. The Mahal Officers were charged with the responsibility of timing their enquiry according to the seasons. At some places this was not properly done. As a result when the schedules reached them, some of the factories were found to be closed and the workmen had gone away. In about five cases, we were able to utilise the muster-roll of the workmen for the census month and thus schedule B was filled in. The details regarding the birth place of skilled workers and labourers were prepared in these cases by local enqui-

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ries and in accordance with the personal knowledge of the manager or the *mucadams*. These five cases were those of factories working within the period above mentioned and were therefore technically within the scope of the census. There were other cases of seasonal industries, *e.g.*, ginning factories which closed earlier in February and these were excluded from the enquiry. Lastly there was the difficulty about defining the limits of an industrial establishment from the point of view of their functions. It was laid down that we were concerned only with factories and works which manufacture and with such staff as are engaged in manufacturing processes. The difficulty was sometimes experienced when a factory impinged on a shop. Some factories like the Alembic Chemical Works and the Hind Candle Factory had a trading side to their concerns. In these cases, it was hard to distinguish between the industrial and commercial sections of their establishment. But these cases were not numerous in this State and the error involved is too slight to deserve notice.

458. **Kind and Distribution of Factories**—The Special Industrial return then is not a complete list of all industrial establishments employing 10 persons and over, nor does it profess to indicate the extent to which mechanical power is being substituted for the hand in the country. In view of this circumstance it was decided to prepare a complete list of factories which use power and are normally in existence together with large cottage-industries employing 10 paid workers and over. It will be of economic interest to know the kind and distribution of these industries. Details regarding the personnel and organisation of only the larger industries have been given in Imperial Table XXII. The following statement gives the main kinds of these establishments and their local distribution by divisions :—

NUMBER AND DISTRIBUTION OF FACTORIES IN BARODA STATE

Kind of Factory	Total State		Central Gujarat including City		North Gujarat		South Gujarat		Kathiawad	
	Total	Included in the special return	Total	Included in the special return	Total	Included in the special return	Total	Included in the special return	Total	Included in the special return
Cotton Weaving and Spinning Mills	6	6	3	3	3	3	..	..	..	..
Gins and Presses (including Cotton Presses) ..	132	100	63	45	40	38	12	10	17	7
Dyeing Factories	8	7	5	4	..	..	3	3	..	..
Glass Factory ..	1	..	1	..	.	..	..	..	..	..
Flour and Rice Mills	70	3	46	1	4	..	20	2	..	..
Oil Mills ..	11	1	3	1	1	..	7	..	..	..
Chemical Works	1	1	1	1	..	..	..	..	..	..
Ice Factories ..	2	1	2	1	..	..	..	..	..	..
Furniture Works	4	3	2	1	2	2	..	..	..	..
Printing Presses	9	9	9	9	..	..	..	..	..	..
Miscellaneous ..	65	30	27	15	4	4	32	10	2	1
Total ..	**309**	**161**	**162**	**81**	**54**	**47**	**74**	**25**	**19**	**8**

The total of 309 factories includes all hand-worked establishments employing 10 persons and over, and also all factories using mechanical power irrespective of the number of persons working. Of these, 32 gins and presses, one dyeing factory, one glass factory, two large oil mills, and one ice factory normally employing the minimum labour fixed by the census were closed at the time of the enquiry. Of the 161 factories included in the Industrial Census, 135 are worked by some form of mechanical power (steam, oil or electricity) and 26 are hand-worked. 67 rice and flour mills (mostly in Baroda City and the neighbourhood and South Gujarat), 8 oil mills, and 35 other miscellaneous factories were worked by machinery but too small from the point of view of their establishments to come within the purview of the census.

Coming now to the special industrial return, we find that of the six cotton weaving and spinning mills—these are the largest industrial establishments—Baroda

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City has 3—two cotton spinning and weaving, and one cotton spinning— Sidhpur has the fourth, and the Dadabhai Cotton Mills at Dehgam—one of the concerns contemplated in the new projects—was just started in time to be included within the census. At Mehsana there is a cotton weaving and dyeing factory. There are besides five cotton and silk weaving establishments—four in the City and one in Kadi *Prant* (in Dehgam town). There are seven dyeing establishments included in the census. There is another at Karjan not in working order. Of the dyeing establishments, three were not " using power ." One cotton press, all the five cotton and silk weaving establishments, the Mehsana cotton weaving and dyeing factory and the brush factory in the City were cottage-industries depending on the hand alone. Altogether the Industrial Census covered 119 textile and allied industrial establishments. Thus 74 per cent. of all factories of the Special Return belonged to this class.

Still confining ourselves to the Return, we find that the next important group concerned industries of luxury—9 printing presses, of which four were hand-presses, a cinema house and a slate pen factory. Except the last which is located in Petlad all are in the City. Industries of food are the concern of nine factories—three rice and flour mills, one chocolate factory (at Bilimora) and two distilleries (one each at Navsari and Vyara towns). Presumably to this category also belong the large water works at Baroda City and Patan, and the Opium Factory (State concern) at Sidhpur. Filtered water-supply is a matter of anxious concern with the State. Already besides Baroda and Patan, six other towns have water-works (Sinor, Bhadran, Sojitra, Sankheda, Bahadarpur and Vyara) and projects to supply Navsari and Mehsana towns with this much needed convenience are well under weigh. There are seven brick, tile and fire-brick factories—one in the City and six in South Gujarat. There are besides in the capital the electric works—a State concern, the Alembic Chemical Works—a remarkable enterprise of the great chemist, the late Mr. T. K. Gujjar, three coach factories, and an important furniture factory run by State agency ; two other furniture factories are in Kadi *Prant* (at Dehgam and Visnagar towns). There are also an *Ayurveda* pharmacy at Sidhpur and a cement factory at Dwarka.

459. Factories by their size—Altogether the 161 factories included in the census employed 12,123 persons. The largest number of factories (48) had an establishment varying from 20 to 50 employees. The hand power factories are usually of small size—20 out of 26 containing less than 20 persons each. The average size of an industrial establishment coming within the census definition and working at the time works out differently in the two cases : the power driven factory has an average establishment of 84 persons each and the hand-worked one that of 28. The most numerous type of factories being as we know connected with textiles, the largest sized factories are also of that class. The power-using cotton spinning and weaving establishments have an average size of 458 persons and indeed would have had a much larger average if the Dehgam Mills were in full working order at the time the census was taken. The cotton ginning factories have an average size of 71 persons—32 out of 74 having an average size of 77 persons, 16 larger ones with 125 hands a piece. Of the dyeing factories two are large, each with an average establishment of 315 persons. The brick and tile factories are either power-driven or hand-worked. The power-driven ones are of course larger, each employing an average of 93 persons, and the hand-worked with 79 persons each. Of the chemical factories, the Alembic is the largest employing 126 persons. The rice and flour mills are usually small sized, so are the coach factories. Of the two water-works, the Baroda City water-works employed 133 hands. The nine printing presses included in the census have an average size of 35 persons.

Factories employing	Using Power		Not Using Power	
	Number of factories	Number of persons employed	Number of factories	Number of persons employed
All Factories ..	**135**	**11,403**	**26**	**720**
10–20 ..	17	263	20	266
20–50 ..	46	1,615	2	69
50–100 ..	39	2,904	2	128
100–200 ..	26	3,515	2	257
200–400 ..	4	1,210	..	..
400 and over ..	3	1,896	..	..

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460. Factories by their Seasons—Of the total of 161 factories, 50 are perennial and 111 are seasonal. Of the seasonal establishments, 104 use power and 7 are hand-worked. Of the 119 textile and allied establishments, 102 are seasonal and only 17 perennial. Five out of the seven brick and tile factories are seasonal. One out of nine factories concerned with food are seasonal. Of the rest, only the ice factory is seasonal. In the marginal statement the different seasons when the factories are supposed to have worked, according to their returns are shewn. The largest number of the seasonal factories work from February to May. The longest worked factories are a brick factory and a dye-house.

Season	Number of factories working	Kind of Factory
October-May	1	1 Brick factory.
November–March ..	3	1 Ginning factory and 2 rice and flour mills.
,, –April ..	1	1 Ginning factory.
,, –May ..	3	2 Brick and tile factories, 1 dyeing factory.
,, –June ..	1	1 Dyeing factory.
December –June ..	5	2 Brick factories, 2 gins, 1 Ayurvedic Pharmacy.
January–March ..	3	Gins and presses.
,, –April ..	2	,, ,,
,, –May ..	2	,, ,,
,, –June	3	,, ,,
February–March ..	2	,, ,,
,, –April ..	10	,, ,,
,, –May ..	49	34 Gins and presses, 15 cotton presses.
,, –June ..	6	1 Ice factory and 5 gins.
,, –July ..	2	2 Gins and presses.
March–May	1	1 Ginning factory.
,, –June	3	3 Gins and presses.
,, –July	1	1 Ginning Factory.
April–May	2	2 Gins.
Merely "Seasonal" presumably December-May.	11	1 Oil mill and 10 gins.
Total Seasonal ..	111	

461. Statistics of Employes—Turning to an examination of the person employed in these factory industries, we find that of the 12,123 persons employed 893 (all males) are engaged in direction, supervision or clerical work, 1,099 (including 2 females) or 9 per cent. are skilled workers and 10,126 or nearly 84 per cent. are unskilled. The textiles employ of course the largest number. Of the total employed, 83 per cent. are engaged in the ginning, pressing, spinning and weaving of cotton and of silk, and dyeing of textile fabrics.

Of the industrial workers, the women form only 24·3 per cent., but except the two women skilled workers, all the rest are among the unskilled. Amongst the adult unskilled workers (aged 14 and over), the proportion of females to males employed is 3 in 10. The highest proportion of adult female workers is in the ginning factories, where there are 46 females to 100 males among the adult employed. The lowest proportion is in the printing press and other industries of luxury where there is only one woman to 33 men. The number of children employed in factories, aged below 14 is 760 of whom 254 are girls. The majority of these are in textile factories, where the proportion of children employed to 1,000 adults rises to as high as 212 (in cotton weaving and spinning establishments). In brick and tile factories, there is one child to every 10 adults.

Comparing with 1911 in the establishments employing 20 persons and over (the only basis on which comparison is possible), we find that in that year 73·2 per cent. of workers were unskilled, and in the present census 84·5 per cent. The skilled workers have decreased, but on the other hand, persons connected with direction, supervision and clerical work have increased from 737 in 1911 to 836 in this census. This increase is due to formation of joint stock business and turning of private owned factories into company concerns. There were altogether 9,421 persons employed in 86 factories or 110 per factory in 1911. In 1921, in 124 factories of the same class, 11,594 are employed, giving an average of 94 persons per factory. Thus while the number of factories has increased, their size has become smaller. There is no necessity to discuss the variations in detail, as already in Chapter I, para 55, these are briefly referred to. The reader may also study Subsidiary Table XII for figures of comparison. The factories that have dropped out in the present census, are those connected with tanning, wood and transport. The Leather Factory has practically ceased to exist, and the tramway as already mentioned have disappeared. The Glass Works was not working at the time of census.*

As to child labour and the employment of women, the figures show that while there is now less than half the proportion of children employed in 1911, the proportion of adult women per 1,000 men entertained in the factories has increased from

* At the time of writing, I learn that it has restarted.

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290 to 325. The stricter enforcement of the compulsory education of children in the villages is seen in the smaller proportion of them that are now sent out by their parents to work in the mills.

462. Index of Industrial Wages in the City—It will be of interest to know the present scale of industrial wages given in the City to the main branches of skilled and unskilled workers. The wages of 1919 have been taken as 100 and the scale according to the latest figures (July 1921) is therewith compared. The largest increases are among the groups which have the highest efficiency and therefore are the most advantaged in bargaining power. It is to be noticed that even the unskilled woman labours and secures greater wages than the peon.

Kind of worker	Present monthly wages in rupees	Present Index number on 1919 as 100
Fitter	58–0 –0	232
Blacksmith ..	41–12–0	167
Carpenter ..	55–0 –0	183
Mason	50–0 –0	183
Fireman	29–4 –0	146
Spinner	22–8 –0	188
Weaver	38–12–0	194
Oilman	22–8 –0	188
Peon	13–8 –0	150
Unskilled man ..	22–8 –0	161
,, woman .	18–12–0	167
,, child ..	13–0 –0	173

It will not be out of place in this connection to study the comparative wage-level of three principal classes of artisans in the four *prant* headquarters in 1917 and 1921. A marginal table is given. The index numbers are prepared on the basis of the wages quoted in the Statistical Atlas of Mr. Govindbhai, and the latest figures are compiled from the reports of the Census Committees. Everywhere the rise in world prices has tended to raise the level of wages; but in Kathiawad, the level is still low compared to the other parts of the State.

Division (Headquarters.)	Mean Rupee Wages (Daily) of					
	Carpenter		Blacksmith		Bricklayer	
	1921	Index number with 1917 as 100	1921	Index number with 1917 as 100	1921	Index number with 1917 as 100
Central Gujarat ..	2– 0–0	133	2–0–0	200	1–10–0	163
North Gujarat ..	2– 4–0	225	1–8–0	200	1–14–0	188
South Gujarat ..	1–14–0	150	2–4–0	225	1–12–0	175
Kathiawad	1– 8–0	200	1–8–0	200	1– 2–0	129

463. Type of Organisation in Factory Industries—Subsidiary Table XIII shows the type of organisation in the factories. Five out of the 161 factories are State or municipal concerns—the two water-works at Baroda and Patan, the opium factory at Sidhpur, the electric works and furniture works in Baroda. 30 are registered companies—all but one of which have an Indian directorate. 22 out of these 30 are textile establishments. 126 including 97 textile factories are private owned,—the owners being all Indians. Of the private owned factories, 93 employ at least 20 hands.

464. Caste or Race in Industries: (*a*) *Direction and Supervision*—Part III of Imperial Table XXII classifies the industrial establishments according to the race or caste of owners and managers. Of the 126 private owned factories 38 are owned by Hindu Vanias, 10 by Jain Vanias, 24 by Kanbis (Patidars), 17 by Parsis, 9 by Musalmans and 7 by Brahmans. The four silk-weaving establishments are owned by Khatris. There are 13 factories in part ownership; these partnerships show quite ample evidence of the cosmopolitan desire of the trading communities of all the religions to join in business. In five concerns, Banias and Kanbis are joint owners, in two others, Parsis and Kanbis have clubbed together. A Maratha and a Luhana are joint owners of another. Parsis and Banias are allied in two and the other combinations are Kanbi and Luhana; Bania, Jain and Musalman; and Kanbi, Bania and Vohora.

Of the 161 factories, 43 are managed by Hindu Vanias, 38 by Kanbis, 27 by Brahmans, 13 by Parsis, 6 by Musalmans, 1 by Europeans and Americans, 14 by other castes and races and 19 were returned as having no manager, *i.e.*, presumably managed by their owners.

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(*b*) *Skilled and Unskilled Workers*—Taking the textile group as being the largest and the most important, we find from Part IV of Imperial Table XXII that in ginning factories, the largest contributories to the ranks of the skilled workers are the artisan groups like Luhars, Sutars and Mochis (224 out of 439), Musalmans (67) and Barias (78). In spinning and weaving establishments there are 342 skilled workers (including 2 women). 106 of these (mostly Tais) are Musalman weavers.

Turning to the distribution of skilled workers by kind and caste or religion, we find that in the textile group, of 936 skilled workers 285 are fitters, 281 are weavers, 121 are engine drivers, 95 carpenters, 75 blacksmiths, 72 cobblers and 7 dyers. 71 out of 75 blacksmiths are Luhars. Of the fitters, 70 are Luhars, 69 are Musalmans and 61 are Barias. Of the 32 Brahman skilled workers 12 are weavers, 11 are engine drivers and 9 are fitters. The largest quota of the unskilled work-people in the ginning factories are from the Barias. They also form the majority of the millhands in gin presses. In the cotton spinning and weaving mills, which have 1,872 unskilled workers, the Musalmans, Marathas, Barias and Dheds are the largest sections. Golas come in the City Mills only. 490 Brahmans figure in the textile establishments as unskilled hands. They are mostly to be found in the ginning factories. There are also 31 Vanias and 396 Kanbis.

465. Places of Origin of the skilled and unskilled—Of the 936 skilled operatives, as shewn in Subsidiary Table XIV, 555 or 59 per cent. were born within the natural division where they were employed. The proportion of immigrants is the largest in ginning factories and presses where it is 51·6 per cent., but in the spinning and weaving establishments which are the largest in size, the majority or 74 per cent. of the skilled are natives of the district of their employment. The immigrants are mostly from the contiguous districts and States, only 78 out of 379 are from remoter areas.

Subsidiary Table XV gives the birth-place figures of the unskilled. Of the 5,876 unskilled workmen, only 1,858 or 32 per cent. are born outside the State, but the proportion of immigrants amongst female workers is greater, *viz.*, 43 per cent. Rather a third of the immigrants of either sex are from " elsewhere "; Marathas from the Konkan or near Bombay have found their way into these factories.

466. Distribution of Power in Factories—Finally let us see the kind of power used in the factories. Of the 135 establishments using power, 102 are steam driven, 31 use oil and 2 are run by electricity. These last are a cinema and a printing press. The former uses electric power generated on the premises, and the latter from outside. The cinema has an oil engine of 8 horse-power and a dynamo (with 7 kilowatts). There are 131 steam engines, and 34 oil ones. The total horse-power of these engines is 9,671½ for steam and 827 for oil. The average horse-power available per unit factory using steam is 94·8 or per boiler 73·8 ; but in the four large cotton mills, the horse-power available is on an average 643 a piece or 429 per boiler. The 131 steam boilers shown in Part VI of Imperial Table XXII are by no means all that exist in the State. The Commerce Department in their latest Report describing the state of things in July 1921, mentions 208 private mills and factories which are registered to have boilers. The number of boilers in existence at that date according to that Report was 228, of which 151 were working and 77 were not.

In 1911, the special Industrial Schedule showed 76 factories worked by steam, 2 by oil, 1 by electricity and 7 by manual power.

467. Number of Looms in use—As Part VII shows, in the four cotton weaving establishments using power, there are 728 looms at work of which 722 are worked by power and 6 by hand (with fly shuttle). The five cotton and silk weaving works that are worked by hand have 15 looms with fly shuttle and 53 without fly shuttle.

468. Conditions of Factory labour—It is seen from para. 465 that the bulk of workers in our factories are natives of the district in which they are employed, and the greater part of the remainder come from contiguous areas. Occasionally where high specialised skill is required, people are specially imported from the outside as in the tile factory at Bilimora, some skilled operatives from Mangalore have been brought. In the Maharaja Mills in the City operatives are secured

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from as far afield as Cawnpore or Agra. In regard to Baroda factory conditions, it cannot be said yet that they are such as to debilitate the workers at an early age. It cannot be denied however that the Indian labourer, not physically well-conditioned at best of times, is apt to break down sometimes under the strain. But unlike Ahmedabad or Bombay, where the personnel changes partly—if not completely every eighteen months, the employment of labourers in our mills and factories is generally permanent. It is reported by the management of Baroda Spinning and Weaving Company that 50 per cent. of their work-people are in service for the last 20 years and that a small proportion—not more than 4 per cent. —resign for the monsoon months, only to come back again in the winter. In the Maharaja Mills—also in the City—we still find that 25 per cent. of those employed at the very commencement of its establishment are still there in its service.

Taking the larger factories it is generally found that labour is generally supplied, not by contractors but by jobbers: "each jobber" to quote from the Suba of Baroda's Report, "is supposed to have round him a small circle of friends and associates; while the head jobber is similarly helped by his own jobbers." In the case of large public works worked by contract, the contractors have their staff of *mucadams* (foremen of labour) who have their own gangs of men, more or less permanently engaged on some work or other,—the labourers are peculiarly fickle in their loyalty and they think nothing of changing their *mucadams* and going off to another contractor who tempts them with better terms.

There is little development so far towards labour consolidation. The pressmen have a union of their own, and there is also a Baroda Labourers' Union. The members of this millhands' society are recruited mostly from one mill. They pay four annas as monthly subscription. Outside agitators with ulterior ends supplied at first the motive power, but the members are now reported to have grasped the effectiveness of trades unionism. Strikes and picketting have begun to count as a factor in industrial life at least in the City. In other industrial towns, strikes are not infrequent, and temporary organisations are set up for the specific purpose of running them. As soon as their grievances are met or satisfied, they return to work and their unity more or less subsides. Strike-pay is an index of bargaining power, and it has to be recorded that in many cases, the factory-management have had to pay their wages for the strike-days. During the strike, labourers usually live on their own savings and only rarely, in cases of extreme indigence, resort to the General Fund. Even then, the help recorded is in the form of a loan. When a strike is protracted, strikers are apt to approach sympathetic outsiders and appeal for charity.

The hours of work in the City Mills are now reduced from 13 hours to 11½ hours daily for men. For women they range from 9½ to 11 hours daily; and the children usually have a seven-hours day. In the Maharaja Mills, it is found that reduced hours of work, far from contracting production, has actually increased it. In Sidhpur, the formal daily hours of work are twelve. Housing and amenities are gradually forming a necessary feature of Mill-life. In this respect the Maharaja Mills are the most progressive. The management there have provided one-room tenements for their employés and are now building two-roomed ones. They also provide for medical attendance, there being a dispensary in charge of a compounder and a medical graduate. Cinemas, competitive games, dinners and trips to historic places are provided periodically as part of their programme of amenities. In the other Mills, there is less provision for housing, partly because round about the factory site and within the city are growing up industrial quarters like the Tai Wad of Wadi, Golwad near one of the gates of the City area, and the other Golwad in Fatehpura. A few apartments suitable for about 25 families are set apart in the Baroda Spinning and Weaving Mills. In the Sidhpur Mills some provision for housing exists, at least for the Kathiawadi operatives. In Bilimora the outsiders (Mangaloreans, etc.) are provided with quarters in the factory grounds; but the other workers, being mostly local, return to their homes in the villages. The hours of work in this town are reported to be lower than in the City being from 8 to 12 in the morning and 2 to 6 in the afternoon. No amenities on the one side and labour organisations on the other exist in Bilimora. In Petlad labourers have no housing accommodation provided, being all local persons. Kalol's industrial future like its mills is still in the making.

469. Conditions of Cottage Industry—Already in para. 445, we have endeavoured to estimate the strength of cottage workers as apart from factory operatives. 93,380 out of a total of 104,635 industrial workers are home workers.

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In 1911, calculating similarly, we get a total of 107,876 cottage-workers. A large item in both years is that connected with refuse-matter—scavengers and sweepers are classed under Industry. In order to get at the true variation, the workers in this class have to be excluded. We then get a total of 88,360 cottage workers in 1921 as against 96,868 in 1911, showing a decline of nearly 9 per cent. In particular industries, as already mentioned, the competition of machine power and of organisation is driving out the slow primitive methods of the hand-worker. Cotton ginning as also pointed out is now almost entirely a power-driven industry. This has resulted in the mixing of widely different lints which are ginned together. Thus the intrusion of machine in this particular sphere of the textile industry has led to an equalisation, and even degeneration, of the Indian staple. The spinning of cotton by hand was fast disappearing until it revived in Gujarat, through the inspiration of the Gandhi movement. Mr. Thakkar's efforts in Amreli have been already referred to. The date of the census has precluded any possibility of the new Khaddar movement leaving any impress upon the figures. But if a census were taken now, there is little doubt that the agitation in this respect has succeeded for the present at any rate to a great extent in spreading the manufacture and sale of home-spun cloth. Modern technical progress has most adversely affected the indigenous dye-industry. The work of rice pounding and husking, and of wheat grinding and other laborious home industries, is being gradually transferred with the changes in the ideas and standards of life to power worked factories. As the Report of the Indian Industries Commission points out "for social and economic reasons, no one will regret the change. The relief of women from these household burdens is a step in advance, and leaves them leisure which they may in the future devote either to more cultured domestic occupations, or to more productive work." The general position in regard to cottage-workers may be briefly stated as follows. The change in organisation has influenced very profoundly not only the methods of the producer but also the general attitude of the consumer. The power of the machine in factories has standardised the quality as well as the value of the article. The hand-worker cannot of course compete with the speed with which the manufactured goods of a factory are turned on the market. The directorate of these organised businesses have not been slow in perceiving the utilities of large scale production by offering the consumer cheaper and better value for his money and thereby attracting his customer more and more away from the home-producer. For not only is the hand-worker handicapped by his tools and his small productive capacity but by his lack of business aptitudes as well. The off-putting of a cobbler or a tailor has passed into proverb: *saini sānj ane mochinun vahānun*—"the to-morrow of a cobbler and this evening of a tailor." This saying really refers to an exaggerated tendency which in a lessened form is a general characteristic of the Indian home-worker. But gradually, though surely, the Indian artisan is perceiving the bearings of the situation. The less efficient of his class are being weeded out to swell the ranks of agriculture or even of general labour. The more lettered sections amongst them drift occasionally to the professions or to the lower ranks of the service. But the most intelligent artisans realise that they have to work with better tools or superior raw materials. This is the reason why a "weaver has taken to mill yarn, the dyer to synthetic dyes, the brass and coppersmith to sheet metal, the blacksmith to iron rolled in convenient sections, in each case with advantage to himself from the lessened cost of production, which has greatly extended his market."* From State Table XXIX we learn that handlooms with fly shuttles are gradually coming into use. It is possible that handloom-weaving will play partly as a result of recent activities, and partly as a secondary occupation of females, an increasingly important part in the rural economy. Hand spinning, although it was dying fast, shows from the success of Mr. Thakkar's experiment that it can be revived, on a large scale even, and as an economic proposition. As a supplementary home industry, its future seems assured if only the regular supply of cotton at various places can be guaranteed.

To quote again from Mr. Thakkar's letter, already referred to in this chapter: "the indirect benefits to the weaver and the carpenter are obvious. So long as the country remains a predominantly agricultu-al one, some supplementary source of income is absolutely necessary for those who depend upon land for their daily bread. Next to that of food, clothing is the greatest universal need and spinning is the most suitable home industry for this country. It may be said that the demand for Khaddar cloth is artificial and hence ephemeral and is bound to disappear sooner or later; but this is due to the misapprehension that mills can make even coarse cloth at a cheaper rate than the Charkha and the handloom. When such cloth is produced

* *Vide* Report of Indian Industrial Commission, pp. 193-4.

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locally and is known to be decidedly more durable and the middleman's profit eliminated, it is bound to supply all local demand at any rate on the part of poorer classes of the population, who form such a large percentage of the total. So the revival of the spinning wheel can be looked upon as a permanent feature and not a mere passing phase in rural Indian life. The nation lives in villages, not in towns."

Whether spinning and weaving are now establishing themselves in the rural economy as the normal subsidiary occupations of agriculturists cannot be proved statistically so long as the returns of subsidiary occupations continue to be as defective as they are now. If the figures of Imperial Table XVIII are to be believed there are only 244 workers amongst 359,360 rent-payers (cultivating owners and tenants) who have returned weaving as their subsidiary occupation. In 1911 the number was even smaller, only 204. These figures are of course entirely untrustworthy and the connection between these occupations is indeed much more intimate. Finally, the opinion of Prof. Radhakamal Mookerjea in his *Foundations of Indian Economics* deserves serious consideration: "The handloom does not compete with the mill, it supplements it in the following way: (1) It produces special kinds of goods which cannot be woven in the mills. (2) It utilises yarn below and above certain counts which cannot at present be used on the power loom. (3) It will consume the surplus stock of Indian Spinning Mills, which need not then be sent out of the country. (4) Being mainly a village industry, it supplies the local demand and at the same time gives employment to small capitalists, weavers and other village workmen; and (5) lastly, it will supply the long-felt want of an honest field of work and livelihood for educated Indians." As with handlooms so with the other cottage industries, it is in the most delicate and artistic types of work, as also in the coarsest and cheapest, that the hand may hope to compete with the machine. In special weaves in textile fabrics, like the far-famed *patola* and *sari*, the minute handicraft may hold its own against the machine. Similarly the delicate tracery of the lacquer work in Sankheda, the high-grade wood carving or metal work at Visnagar, the silk and gold thread weaving at Baroda and Patan, the dyeing and printing at Padra, Kathor or Nandol (Dehgam), the turban-making at Dabhoi—all these are activities which, with a judicious and continued assistance, may be kept alive and even made to prosper by extending their *clientele* and thereby helping to revive the waning interest of the present-day Indian in the immense artistic wealth of his country.

470. Cottage Industries in Selected Towns—The figures regarding cottage industries by talukas were collected by the Census staff and compiled into the State Table XXIX. These have been already dealt with in paras. 446 *et seq.* It was pointed out there that the figures for the City were not included therein. A special enquiry was conducted into the number of workers in specified cottage industries in the City by certain officers detailed by the Director of Commerce. Similar enquiries were undertaken by the same agency in 20 other towns. The figures for the towns are presumably included in those for their respective talukas that were prepared by the Census Supervisors and compiled into State Table XXIX. These separate figures for the 21 towns were afterwards reduced to a statement by the Commerce Department and have been made available to me. On the whole the results of this inquiry are to be received with extreme reserve as in certain respects it is very defective. At some places, the inquest was neither complete nor accurate. In Baroda City particularly, the figures seem far out of the truth. For instance, the number of metal workers is shown to be only 12, while the general census makes it to be 43. The number of workers in gold and precious metals in the City is returned in the general census to be 610, while the Commerce Department inquiry makes it out to be only 52. Iron workers similarly number 320 in the general occupation return and only 19 in the commerce return. Under these circumstances, I have not availed myself of all the figures. Only the main figures as seem to be more in accord with the actual circumstances than the others have been included in the following table. The details for 14 towns only besides the City have been taken. In column 2 of this Table I give figures of the number of factories in actual working in each town. In the last column I extract from State Table XXIV (occupations of selected Towns) figures of actual workers in each town :—

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NUMBER AND DETAILS OF INDUSTRIES IN SELECTED TOWN

Name of Town	Number of large factories included in Imperial Table XXII	Number of hand-looms in use	Number of printers and dyers of cloth (workers)	Number of workers in wood (cabinet making)	Number of workers in basket making	Number of metal workers (not precious metals)	Number of fisheries	Number of total workers shown in State Table XXIV (General Census)
Baroda City	32	283	11	70	19	12	100	41,224
Petlad	3	225	2	14	3	60	..	5,851
Sojitra	..	71	4	17	..	48	..	2,832
Dabhoi	16	300	2	5	..	20	..	6,933
Amreli	3	315	110	63	10	120	..	6,018
Kodinar	2	6	10	34	5	39	52	1,958
Kalol	3	4	3	35	8	34	..	2,885
Kadi	13	20	6	23	..	59	..	3,956
Vadnagar	3	74	88	48	..	58	..	5,022
Visnagar	1	74	5	67	..	291	..	5,367
Unjha	3	157	3	35	..	47	..	4,478
Sidhpur	2	1	9	31	..	47	..	6,210
Patan	1	602	39	74	..	155	..	10,070
Navsari	4	169	11	51	10	22	110	8,027
Bilimora	7	5	1	4	6	10	41	3,226

471 Bilimorla, Dabhoi and Petlad—More useful than these statistics are the admirable little *brochures* prepared under the special superintendence of the Director of Commerce regarding the economic possibilities of selected areas. These bulletins are in Gujarati and the main details of three towns are extracted from them and made available to the reader of this Report.

First let us take Bilimora. Bilimora with its suburb Desra has a population of 9,279 persons. As shewn in Chapter II, it is one of the progressive towns in the State. Of its total number of 3,226 workers, 1,017 are engaged in Industry. Most of these are engaged in the large factories that are in existence here. Bilimora is an enterprising town, which owes its present busy activity to the adventurous spirit of the Parsis. The chief articles of produce of the town are castor oil, cakes, rice and other food grains, timber, bark of babul tree (which is used for curing hides), bricks, lime, etc., and fish. The large factories include the Hind Candle Works, the Chocolate Factory, 7 rice and flour mills, 3 ginning factories, 2 saw mills, 2 large brick factories (besides other small ones) and 3 lime kilns. One of the projected cotton mills is to be situated here. The Candle Works is unique of its kind in India. Started in 1901, it has now a working capital of Rs. 1,50,000 and it utilises the raw material that is available round about Bilimora in a large quantity. It has an establishment of 71 persons of whom 10 are engaged in supervision and clerical work, 6 are skilled workers and 55 unskilled labourers. The Chocolate Factory was started in 1906, but went into liquidation in 1911. But later it was bought up by the owner of the Candle Works. It works at present on a small scale, but it is contemplated to extend its activities. From the oil mills, 5 lakhs Rupees worth of castor oil is sent outside. Besides those that are worked by bullock power, there are 55 establishments worked with crude oil engines. For each oil press, a daily supply of 8 to 9 maunds (local) of castor oil seeds is required. A fully enquipped factory for rice pounding and husking exists, with power to husk 20 cart-loads of paddy every day. At present it is not working. The saw mills have now ceased to work. The large brick factories can turn out about 6,100,000 bricks annually. Altogether Bilimora sends out 7,100,000 bricks annually. In the pre-war days, the actual export was greater. In the three lime kilns, 4,000 candies (32,000 tons) are turned out annually. Besides these industries, Bilimora is famous for its building of sea-going boats. There are now six *wadas* (yards) which build about six boats a year. Once upon a time this industry was much more flourishing than now. Generally speaking, Bilimora is rich, but the capitalist classes are still backward in investing in industrial enterprises. Labour of the unskilled type is plentiful, but lazy, thriftless and unorganised. The skilled worker is a rarity. Bilimora, besides being an industrial centre, is an important distributory of agricultural produce. There is a grain exchange (Mahajan) which does useful work in assisting the agriculturists from the surrounding villages to sell their produce at market rates and get the value quickly from the purchasers, protect them from fraud at the hands of the weighers and help them generally in their transactions.

Dabhoi is a large Railway centre, situated conveniently in the Kahnam tract; for these reasons it is a very important trading and distributory centre. It is a very old urban settlement and artisan groups have been long established there. Amongst the communities, the most affluent are the Sathodra Nagar and Jharola Vania castes. There is no speciality however in the cottage industries. One of the old established industries is the handloom weaving, affected chiefly by the Tais (Musalman weavers). There are about 300 looms at work, but their concern is mostly with the coarser fabrics. Only a few looms go in for special weaves. There are three families of Dabgars who are engaged in the making of drums, *tablas*, leather jars, etc. They also do lacquering similar in style to the Sankheda work. Five families of Kharadis do odd jobs in

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carpentry. Two Bhavsar families do dyeing and printing of cloth. There are 18 families of Ghanchis (4 Musalman) who are oil-pressers. All work by bullock power except one family which uses a camel, which is found to be more productive. There are about 20 families of Kansaras working in bell-metal and brass. There are altogether 18 cotton gins and presses in existence. Round about Dabhoi, cotton of an excellent quality—only a little inferior to the Broach variety—is grown extensively. There are besides four rice mills and one workshop. The gins and presses are worked by capital varying from Rs. 50,000 to 3 lakhs. Altogether 1,500 to 1,800 labourers, besides skilled operatives, are engaged in these factories. The total number of workers in the town is 6,933. The artisans' wages range from oil men getting Rs. 15 to 35 per month to engineers with monthly salaries from Rs. 100 to Rs. 250.

Petlad is one of the other places marked out for future industrial development. A large cotton mill is provided in the industrial projects for this town. At present there are two dyeing factories, one of which is the second largest in India. The working capital of the Petlad Dyeing Works is 4 lakhs of rupees. The establishment can dye 5,400 bales of cotton every year. The cotton that is bought for dyeing is mostly from the Ahmedabad Mills and the dyed stuffs are sent to Calcutta, Cawnpore, Nagpur and other places. German synthetic dyes are used. Labour saving appliances like soapers, extractors and steam boilers are part of the plant. The working capital of the Petlad Sayaji Dyeing and Manufacturing Company is about Rs. 3,50,000 to 4 lakhs. 3,600 bales of cotton are dyed there annually. In the two dyeing factories over 600 persons are at work. The Petlad Oil Mill was not included in the Special Return. But it usually employs 25 persons. Two ginning factories, also not found in the Industrial Return, are said to exist, but they work rather fitfully and little is known about their progress. Turning to the hand industries for which Petlad is renowned, we find hand loom weaving to be the most important. Mostly Kachhias and Musalman Shaikhs are engaged in this industry. The number of hand looms in the table given in the preceding paragraph is shown to be only 225, but the truth is that at least 800 hand looms belong to the Kachhias in the town. The Census return of cottage industries (State Table XXIX) gives a total of 1884 hand looms for Petlad Taluka. Vaso and Pij are two other towns which go in largely for this industry. Making deductions for these, we estimate the number of hand looms in Petlad town to be 900 or a little over. The distinctive work of these Petlad hand looms is the *dhoti jota* (pairs of Dhotis). Kachhias mostly work in this line. The hand loom of the usual type with a pit is used—and the daily turn-out is 4 to 5 yards. A new type of fly shuttle was introduced some time ago, but the weavers fearing excommunication did not take to it. In justice to them it must be added however that a new type of loom has been invented for setting on bodices borders interwoven with golden fabrics. Of the 700 weaving families in the town, only 103 weave for themselves; the others work for the local tradesmen. The Petladi weavers work with English yarn, while their Ahmedabadi rivals use the yarn made in their local mills. There are two large trading firms in Petlad in this business who supply the weavers with their raw material. Altogether Rs. 50,000 worth of silk and cotton thread is used in the Petlad weaving industry every year. Of the other industries it need only be mentioned that 10,000 maunds of raw hides are sent every year from Ahmedabad to Petlad for curing. Two Musalman trading concerns are engaged in the agency of this business. The charge for curing which the Dheds exact is Rs. 8 for 20 pieces of hide skins. The methods of these Dhed tanners are so primitive that they take 20 days over 20 pieces. Even then they are not completely cured. For the rest of the processes, the hide skins are sent to Bombay and thence even to Europe sometimes. Perhaps the Ahmedabadi find the Petlad Dhed labour cheap, which explains why they send hideskins in such quantities. Petlad, it may be concluded, has fine industrial possibilities. It is a Railway-centre conveniently situated, with a labour supply that is as plentiful as it is of good class. Raw material as well as fuel for the working of factories is to be had also in great abundance. The possible development of Cambay near by as a harbour may further contribute towards the progress of Petlad.

472. General Distribution of wealth—Finally, there is space for a brief consideration of the economic changes that have influenced the development of the State in the last decade. The economic distribution of wealth can be seen from the broad division of population into agricultural, industrial, commercial, professional and "Other" classes—*vide* paragraph 422. A closer examination would require in the first place the differentiation of industrial workers from agricultural labourers (farm hands, etc.) and general low grade labourers of the miscellaneous and casual type who are on the margin of work and life, and secondly, the isolation of the fixed wage-earners from the rest. It is important to know the strength of the receivers of fixed incomes, for it is on them that the vicissitudes of the times deal their hardest blows. Of these two tasks, the first is easily done—especially in this Census, when under the occupation scheme provision has been made for isolating unskilled workers from the skilled. The second is rather more difficult. In the occupational scheme certain groups seem obviously to belong to this category. Railway, Postal and Telegraph employés, persons employed in State or other Government service including persons engaged in instruction, forest officers, rangers, guards, village and municipal employés, the members of Police force and

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officers and men of the Army would readily go into this group. Agents and managers of estates, managers and persons employed in theatres, etc., persons (other than labourers) who are employed in harbours and docks (including pilots), persons (other than labourers) who are employed in the maintenance and construction of harbours and docks, and rivers, streams and canals, persons employed on road construction, bridges, etc., who are not labourers, and clerks, accountants, cashiers, etc., of unspecified offices may also go under this head. Engineers, architects, medical men and women, nurses, midwives, etc., are not included because even though some may draw salaries, they have other income from the practice of their professions. With these the list is not yet complete for the occupation return does not differentiate between fixed wage-earners and other persons in trade. But it may be assumed in regard to them that their income fluctuates with the state of the trade.

Classifying the population on this basis we get the marginal table. The industrial occupations support about half as much as agricultural and general labour combined. The fixed wage-earners and their dependents constitute 66 per mille of the population and are about as numerous as persons connected with trade. The professions representing more or less the affluent sections of the community form only 24 per mille. The variations in economic condition are closely connected with this occupational distribution. Any comparison with 1911 figures is profitless, because the unskilled labourers were not isolated and comparison of figures by groups for two censuses is vitiated by changes in classification and errors of record; but we have seen generally from the statistics of fertility compiled in Chapter VI Part II that the populations on the margin of life engaged in occupation that entail heavy physical but little mental energy are endowed with larger families than the higher and the more intellectual sections of society. In a normal decade with no epidemics or other disturbing factors, such sections of the community may be expected to increase faster than the rest. The last two decades have been unusual and the mortality among these lower orders has been particularly heavy. Further the true variation in those classes have been obscured by such tendencies as the turning of agricultural labourers into peasant proprietors, and the diversion of workers in the weaker industries to other occupations. These occupational changes are difficult to exhibit statistically, but such materials as have been collected from different sources may be briefly utilised in order to give the reader a general idea of the economic changes.

Kind of Occupation	Persons supported	Proportion per mille
All Occupations.	*2,126,522*	*1,000*
Agriculturists with stake in land.	1,060,487	499
Agrestic labourers.	295,815	139
General and other low grade labourers (including sweepers and scavengers), mendicants and unproductive occupations.)	135,294	64
Industrial workers (including exploitation of animals, minerals and transport).	302,397	142
Fixed wage-earners.	140,617	66
Traders.	141,016	66
Professional persons and persons living on their income.	50,896	24

473. Value of Agricultural land—First as to land. 50 per cent. of the population are agriculturists in the sense that they have a stake in the land either as landlords, peasant proprietors or tenants. The conditions affecting land in the different parts of the State have therefore a vital bearing on the economic conditions. The differences of soil, climate, rainfall, etc., and their bearing on density have been already discussed in full in the opening chapter, and the subject cannot therefore be again reopened. But a study of the differences in the value of agricultural land is of great economic interest here. An attempt was made by Rao Bahadur Govindbhai in his Statistical Atlas, to collect statistics of land values in the different parts of the State. Of course, very accurate data are not available. From the Sub-registrar's offices in the talukas however, the registered deeds of the sale of land are obtainable. These give information of the market price of land in the different villages. Of course within the taluka, there may be, and are, many striking contrasts in regard to the market prices of land. A mean figure therefore, obtained by merely striking a crude average for agricultural land sales can only

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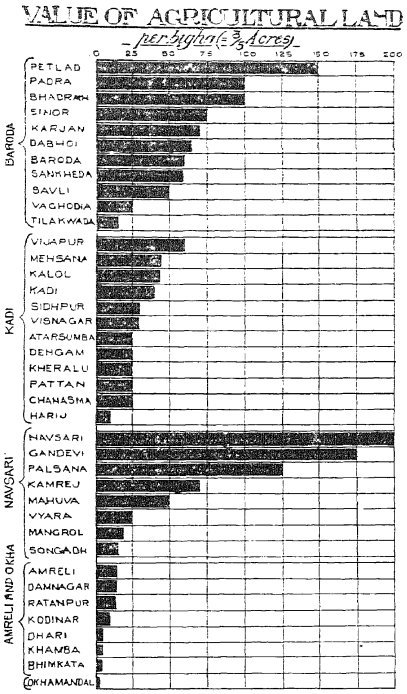
succeed in giving the roughest view of the comparative wealth of the State. The marginal diagram plots these averages in order of value (in rupees) per bigha or three-fifths of an acre. It will be seen therefrom that the greatest contrasts economically—as we have found to exist in scenery as well as in the racial composition of the population—are found in Navsari *Prant*. The highest land values are in that *prant* also—in the Rasti tract. Only in 14·4 per cent. of the area of that division however the land values have a minimum average of Rs. 100 per bigha. In Baroda *Prant*, 24·3 per cent. of the area is valued at that figure and over. Kadi *Prant* has a more uniform range; while the two *prants* of Kathiawad are the poorest in the value of its soil, as well as in its productivity. Ten years ago, Rao Bahadur Govindbhai thinks, the Baroda *Prant* land was more valuable than Navsari, "but the regular rainfall and consequent immunity from famine of the latter district has brought it to the forefront."



474. Statistics of Yield—Turning to the variations in production, we have to rely on the crop estimates of local officers, which are compiled and published in the annual reports of Subas. Already it has been pointed out in Chapter I, para. 48, that the inclement condition of the seasons in recent years has compelled the cultivator increasingly to take to the commercial crops, and leave the food crops more and more to the marginal areas. The area growing food crops is progressively diminishing since 1890, and the rate has been accelerated since 1917. In the margin are given figures for the two kinds of crops for the years 1911 and 1920. In 1911, the total yield came to 14·29 maunds per person (calculated on the population of 1911). In 1920 the yield per person (calculated on the population of 1921) comes to only 8·54 maunds per person. So if these figures are to be believed the production has decreased to the extent of 5·75 maunds per person. The non-food yield has increased from 2·45 maunds per person in 1911 to 3·27 in the latest year. The food yield has decreased from 11·84 maunds to only 5·27, so that production of food crops to-day is even less than half of what it was 10 years ago. The proportion of food crops produced in 1919-20 is the lowest in North Gujarat, with only 3·34 maunds per person, and the highest in Kathiawad with 14·20 maunds. South Gujarat produced according to the latest figures 4·47 maunds and Central Gujarat 5·75. Since 1911 the Kathiawad yield has decreased from 34·75 maunds to 14·20. The South Gujarat figures show the greatest proportionate decline. In maunds, the food yield there is now even less than one-third, and per head the food supply produced in the year is nearly one-fourth.

FOOD AND NON-FOOD CROPS (YIELD IN MAUNDS—000'S OMITTED.)

Division	Yield in 1911		Yield in 1920	
	Food.	Non-food.	Food.	Non-food.
State	**24,078**	**4,978**	**11,197**	**6,659**
Central Gujarat ..	5,432	2,710	4,038	3,497
North Gujarat ..	6,959	764	3,007	2,092
South Gujarat ..	5,491	1,350	1,624	816
Kathiawad	6,196	154	2,528	554

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Kind of Crop	Yield in maunds in (000's omitted)	
	1911	1920
Food Crops.		
Rice	4,852	1,957
Juvar	7,361	4,430
Bajri	7,177	3,113
Kodra	1,505	706
Pulse	1,709	289
Wheat	1,475	702
Non-food Crops		
Cotton	3,906	5,131
Sugar-cane ..	39	190
Tobacco	480	263
Linseed	114	774
Rapeseed	439	601

Turning to individual crops, the variation since 1911 is shewn in the marginal table. The largest decline is under pulses, in which the yield is now a little less than one-sixth. Wheat is more than halved, so are *juvar* and rice. On the other hand under non-food products, the cotton yield is now more by over 31 per cent., that of sugarcane is now fivefold and of linseed nearly sixfold.

This displacement of food grains is no doubt a matter of serious anxiety. The extension of Railway communications has made it possible to distribute food grains more equally all over the State, but as the marginal statistics of railborne trade show, our dependence on the outside in the matter of food grains as markedly increased within recent years. The question of agricultural wages is looming more largely in the economics of cultivation and it is interesting to note in this connection that the cultivable land is passing more and more into the hands of non-agriculturists. The number of Khatedars who cultivate their own lands has increased from 253,812 in 1909-10 to 261,273 in 1919-20, or by 2·9 per cent. In the same period, the non-cultivating holders of land have increased from 53,941 to 66,887 or by 24 per cent. The figures of transfer of land by agriculturists to non-agriculturists show that the tendency of the latter to take possession of the agriculturists' land is to a certain extent increasing.

IMPORTS AND EXPORTS OF FOOD GRAINS (RAILBORNE TRADE FIGURES)

Year	Food grains (net weight in Indian maunds) (000's omitted)	
	Exports	Imports
1915 ..	660	371
1916 ..	108	2,758
1917 ..	644	3,535
1918 ..	2	4,776
1919 ..	529	2,404

Year	Average area (in bighas) of land transferred annually from agriculturists	
	To agriculturists	To non-agriculturists
1909–12 ..	46,712	16,260
1912–15 ..	71,915	16,899
1915–17 ..	86,396	21,040
1919–20 ..	88,828	34,019
1920–21 ..	79,106	25,943

475. The Size of the Holding—An interesting index of the economic changes in agriculture is also afforded by a comparison of the size of holdings in the State in different years. The average size of the holding in 1905-06 was 17·75 bighas. In 1910-11, it was 19·9. In the following interval it has remained almost at the same figure. In 1919-20, the size was 19·52 bighas. In the marginal table, the size of holdings is compared for the years 1910-11, 1915-16 and 1919-20. The holdings below 25 bighas formed 75 per cent. of the total in 1910-11. Since then an increase in the number of holdings has occurred to the extent of 6·6 per cent. Of the total increase of 20,202 holdings, 17,158 or 85 per cent. occurred in these small sized holdings. Thus their contribution to the total is larger than is warranted by their actual strength. The smallest sized holdings, *i.e.*, those which are not economic, have increased by 7·2 pointing to the influx of thriftless classes into the ranks of the peasant proprietors. The middle group sized from five to 100 bighas,—the group which a cultivating owner is most likely to go in for as being easiest to manage and best looked after—shows an increase of 6·3 per cent. But the larger holdings have increased by 9·3 per cent, so that it is probable that non-agricultural capitalists have taken increasingly to investing in land.

Size of Holdings	Number of Holdings		
	1910–11	1915–16	1919–20
Five bighas and under.	88,397	91,876	94,747
Between five and 25 bighas.	144,918	150,629	155,726
Between 25 and 100 bighas.	67,708	70,055	70,386
Between 100 and 500 bighas.	6,597	6,390	6,877
Above 500 bighas.	338	399	424
All Holdings ..	**307,958**	**318,649**	**328,160**

476. General Agricultural Conditions—In various ways it is seen that the true agriculturists are feeling the necessity of change. The contraction of credit due to many forces, the rise in world prices forcing up the wages of labour, the rapidly diminishing surplus of available land, the influence of

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modern education and thought weakening the ties that have hitherto bound the cultivator to his soil, the insistent call of the towns with their industries and their higher wages to the aspiring youths of the country side—all these are causes that operate in this respect. Hitherto the figures do not show however any decline in the strength of the agricultural population: the increase has been indeed greater than the general increase in the population. But that this is so, and that an actual decline has been hitherto prevented is due to the fact that indigenous industries have decayed and that industries of the modern type have not yet sufficiently advanced to make their impress on the figures. The coming decade will show what the trend will be. And the test will be the wages of agrestic labour or in other words the cost of production. So long as the agriculturist is able to exact high prices for his commercial crops, so long the question of wages will not disturb him much, but as soon as the wages rise to a point at which the employer of general labour is enabled successfully to compete with the farmer, then will be the time for the latter to consider seriously whether he should have recourse to the labour-saving appliances of scientific agriculture and the intensive methods of Western countries. The ensuing years will see immense developments in these directions. In the co-operation movement there is again the hope that agriculturists will find in its banks a sufficiency of ready capital to finance the ordinary movements of the crops. Ordinarily, the indigenous organisation of rural credit with which now the ryot has dealings has little available capital to make advances wherewith he can buy seed and meet the expenses of cultivation. The extension of co-operation among the more intelligent cultivators is also an indication of their awakening to the need of pooling their resources and thus obtaining expensive agricultural machinery. But in the meanwhile in normal years, there is little indication at present of any diminution of agricultural profits. The land revenue demand of a little over crore of rupees is about 15 per cent. of the annual gross profits of the agricultural classes. The tendency to relinquish land, as it appears from marginal figures, is much less now than in previous years, so that at present there is no reason to doubt the tenacity with which the cultivator clings to the land.

Year.	Land relinquished in bighas.
1910–11 ..	81,879
1914–15 ..	22,220
1916–17 ..	11,175
1919–20 ..	6,413

477. Income-tax Payers—Turning to the non-agricultural elements in the population, it is seen that the most important section are the income-tax payers. In this State the minimum taxable limit is the income of Rs. 750 a year. The latest report shows that there were 9,915 assessees in 1920, of whom 1,726 were Government servants. There is a uniform scale of Rs. 1-8-0 per Rs. 100 of income charged as tax in the State. The income-tax demand from all assessees except Government servants in 1920 was Rs. 1,71,766. This at the above rate would mean an annual income of Rs. 1,14,51,060. Allowing for wilful concealments of income amounting to about a third of this figure, we get an income of Rs. 1,52,68,080 annually or Rs. 1,864 per year per each person assessed amongst the non-agricultural classes. Giving four persons per each assessee as constituting his family and distributing the income among them equally we have 32,756 persons or 15 per mille of the population having an income of Rs. 466 per head per year. These are necessarily the highest and economically the most efficient group in the State. The majority of these are of course in trade and manufactures. A large proportion of them are owners of property and not an inconsiderable section belongs to the professions. Comparing the figures of assessees with the corresponding statistics of 1910, we see from the marginal figures satisfactory evidence that the wealth of the people has risen. Allowing for a more vigorous administration of the Income Tax Act indicated by the largest increase in the number of assessees occurring in the smallest sized incomes, one must still conclude that on the whole the income of the non-agricultural classes has risen.

NUMBER OF INCOEM TAX ASSESSEES.
(GOVERNMENT SERVANTS EXCLUDED)

Size of Income (in Rupees)	Number in	
	1920	1910
750–1,000 ..	4,613	2,780
1,000–2,500 ..	3,061	1,844
2,500–5,000 ..	388	186
5,000–10,000 ..	92	55
10,000–15,000 ..	12	11
15,000–20,000 ..	9	8
20,000 and over ..	14	4

478. Summary—This chapter may seem to be unduly protracted but travelling over the figures collected and analysed, their extent and complexity will convince the reader that a cursory analysis—more cursory than the one here attempted—would have been inadequate under the circumstances.

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A general review of employments in the State enforces one impression on the mind more strongly than any other and that is the continued hold of the land on the people. Not only the persons supported by it have increased, but the industries which are founded on this basic occupation and thrive on its prosperity show the greatest actual advance. Analysing the figures more closely we find the increase in the strength of agriculture counterbalanced by other circumstances. The rent receivers have decreased—the true agriculturists are allowing the non-cultivating sections to set up an " absentee " tenure of land ; and moreover the economies of cultivation have now to take into account the possibility of a contraction in the prices of crops and the danger of the cost of production rising to a level which would necessitate the recourse to machinery. Amongst the intelligent sections there is a growing consciousness towards unity and co-operation. Turning to other occupations, we see that the competition of machinery and modern technical methods has led to the decay of some industries. But on the other hand certain other cottage industries have shewn a continued vitality. Generally modern business methods and organisation are slowly modifying the processes and the attitude of our artisans. Local capital is shewing a curious mixture of timidity and enterprise. While it rushes into the establishment of ginning factories and other industries where competition is already great, it fears the consequences of venturing into unexplored avenues of enterprise inspite of the tested experience of other countries that such venturing will be profitable. The decade closing with the Census of 1921 marks the end of an epoch in the industrial history of this State. It has already registered the initial stages of the new advance. The pressure of changing times is remodelling the whole of our industrial organisation. The influx of new elements into agriculture—unused to its immemorial ways—may yet help to stir the backwaters of our rural life and to move what has hitherto seemed so moveless—to new ideas and new activities.

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SUBSIDIARY TABLE I.—General Distribution by Occupation

CLASS, SUB-CLASS AND ORDER	Number per 10,000 of total population		Percentage in each class, sub-class and order of		Percentage of actual workers employed		Percentage of dependents to actual workers	
	Persons supported	Actual workers	Actual workers	Dependents	In City	In other areas	In City	In other areas
1	2	3	4	5	6	7	8	9
All Occupations	**10,000**	**4,672**	**41**	**59**	**5**	**95·0**	**130**	**147**
A. Production of raw materials	**6,641**	**2,682**	**40**	**60**	**·4**	**99·6**	**136**	**148**
I. Exploitation of animals and vegetation	*6,638*	*2,681*	*40*	*60*	*·4*	*99·6*	*134*	*148*
1. Pasture and Agriculture	6,625	2,675	40	60	·4	99·6	134	148
(a) Ordinary cultivation	6,388	2,575	41	59	·4	99·6	139	148
(1) Income from rent of agricultural land	89	32	36	64	4	96·0	246	177
i. Inamdars, Jagirdars and other alienated land holders	15	5	33	67	16	84·0	278	192
ii. Rent-receiving Khatedars	74	27	37	63	1·7	98·3	190	174
(2) Ordinary cultivators	4,887	1,690	35	65	·4	99·6	139	189
i. Cultivating owners	4,502	1,537	34	66	·4	99·6	137	193
ii. Cultivating tenants	374	148	40	60	·7	99·3	152	152
iii. Cultivators unspecified	11	5	41	59	·1	99·9	..	147
(3) Agents, Managers of landed estates (not planters), clerks, rent collectors, etc.	21	10	50	50	1·7	98·3	95	101
(4) Farm servants	31	17	54	46	..	100·0	..	84
(5) Field labourers	1,360	826	61	39	·2	99·8	52	65
(b) Growers of special products and market gardening	11	5	47	53	16	84·0	104	110
(7) Fruit, flower, vegetable, betel, vine, areca-nut, etc., growers	11	5	47	53	16	84·0	104	110
(c) Forestry	7	3	46	54	16	84·0	129	117
(d) Raising of farm stock	219	92	42	58	·5	99·5	103	139
(e) Raising of small animals	..	..	71	29	..	100	..	50
2. Fishing and hunting	13	6	45	55	25	75	116	123
II. Exploitation of Minerals	*3*	*1*	*27*	*73*	..	*100*	..	*315*
3. Mines	2	1	34	66	..	100	..	195
4. Quarries of hard rocks	..	..	33	67	..	100	..	233
5. Salt, etc.	1	..	15	85	..	100	..	753
B. Preparation and supply of raw materials	**1,987**	**781**	**39**	**61**	**10**	**90**	**139**	**156**
III. Industry	*1,192*	*492*	*41*	*59*	*9*	*91*	*115*	*132*
6. Textiles	276	126	46	54	8	92	106	121
7. Hides, skins and hard materials from the animal kingdom	75	28	37	63	1·4	98·6	127	173
8. Wood	143	52	36	64	8	92	151	179
9. Metals	70	24	33	67	8	92	138	204
10. Ceramics	132	60	46	54	4·5	95·5	89	120
11. Chemical products properly so called	53	19	36	64	5	95	133	181
12. Food industries	39	19	50	50	24	76	81	106
13. Industries of dress and the toilet	214	88	41	59	7	93	119	146
14. Furniture industries	..	..	36	64	58	42	20	282
15. Building industries	70	29	42	58	16	84	141	137
16. Construction of means of transport	2	1	55	45	8	92	110	80
17. Production and transmission of physical forces (heat, light, electricity, motive power, etc.)	1	1	69	31	81	19	28	124
18. Unspecified industries	117	46	39	61	20	80	114	167
IV. Transport	*131*	*53*	*40*	*60*	*17*	*83*	*176*	*142*
20. Transport by water	14	4	31	69	·4	99·6	325	229
21. Transport by road	42	18	44	56	16	84	193	114
22. Transport by rail	68	28	40	60	20	80	162	144
23. Post Office, telegraph and telephone services	7	3	37	63	21	79	217	149
V. Trade	*663*	*236*	*36*	*64*	*10*	*90*	*162*	*183*
24. Banks, establishments of credit, exchange and insurance	74	24	31	69	10	90	159	214
25. Brokerage commission and export	8	2	34	66	4	96	364	249
26. Trade in textiles	65	21	32	68	14	86	193	215
27. Trade in skins, leather and furs	3	1	47	53	3	97	87	192
28. Trade in wood	6	2	35	65	10	90	346	136
29. Trade in metals	4	1	26	74	40	60	150	361
30. Trade in Pottery, bricks and tiles	2	1	44	56	12	88	211	108
31. Trade in chemical products	2	1	25	75	44	56	310	287
32. Hotels, Cafes, restaurants, etc.	19	7	34	66	20	80	127	184
33. Other trade in food stuffs	288	110	38	62	10	90	145	163
34. Trade in clothing and toilet articles	5	2	33	67	29	71	217	202
35. Trade in furniture	5	2	39	61	17	83	191	119
36. Trade in building materials	3	1	38	62	36	64	147	176
37. Trade in means of transport	28	10	36	64	·5	99·5	125	176
38. Trade in fuel	9	4	44	56	22	78	89	143
39. Trade in articles of luxury and those pertaining to letters and the arts and sciences	20	7	34	66	15	85	347	170
40. Trade of other sorts	122	40	33	67	6	94	137	206

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SUBSIDIARY TABLE I.—General Distribution by Occupation—*contd.*

CLASS, SUB-CLASS AND ORDER	Number per 10,000 of total population		Percentage in each class, sub-class and order of		Percentage of actual workers employed		Percentage of dependents to actual workers	
	Persons supported	Actual workers	Actual workers	Dependents	In City	In other areas	In City	In other areas
1	2	3	4	5	6	7	8	9
C. Public Administration and liberal arts ..	**634**	**257**	**41**	**59**	**22**	**78**	**152**	**16**
VI. Public Force	*110*	*50*	*45*	*55*	*42*	*58*	*108*	13
41. Army	37	19	52	48	79	21	94	94
44. Police	73	31	42	58	18	82	155	135
VII. 45. Public Administration	*195*	*70*	*36*	*64*	*26*	*74*	*218*	124
VIII. Professions and liberal arts	*329*	*137*	*42*	*58*	*13*	*87*	*139*	14
46. Religion	204	88	43	57	8	92	110	123
47. Law	10	2	26	74	39	61	251	36
48. Medicine	17	6	35	65	31	69	193	15
49. Instruction	63	26	41	59	16	84	171	136
50. Letters and arts and sciences..	35	15	42	58	23	77	99	146
D. Miscellaneous	**737**	**352**	**48**	**52**	**13**	**87**	**89**	**112**
IX. 51. Persons living on their own income.	*54*	*20*	*37*	*63*	*32*	*68*	*137*	177
X. 52. Domestic service	*43*	*23*	*53*	*47*	*15*	*85*	*109*	55
XI. 53. Insufficiently described occupations.	*591*	*280*	*47*	*53*	*11*	*89*	*88*	114
XII. Unproductive	*40*	*29*	*58*	*42*	*20*	*80*	*26*	61
54. Inmates of jails, asylums and hospitals ..	4	4	86	14	82	18	14	26
55. Beggars, vagrants, prostitutes	42	23	56	44	10	90	39	84
56. Other unclassified non-productive industries	4	2	60	40	26	74	38	77

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SUBSIDIARY TABLE II.—Distribution by Occupation in Natural Divisions

OCCUPATION	Number per mille of Total Population supported in					
	Baroda State	Central Gujarat	Baroda City	North Gujarat	South Gujarat	Kathiawad
1	2	3	4	5	6	7
Total	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**
I.—Exploitation of Animals and Vegetation	*664*	*732*	*63*	*656*	*770*	*586*
1.-(a) *Agriculture*	*640*	*717*	*58*	*623*	*748*	*558*
(1) Income from rent of Agricultural land ..	9	12	10	8	3	14
i. Inamdars, Jagirdars and other alienated landholders	2	1	7	7	·4	6
ii. Rent receiving Khatedars	7	11	3	1	3	8
(2) Ordinary Cultivators ..	489	546	38	539	431	385
i. Cultivating owners .	450	469	33	525	380	364
ii. Cultivating tenants.	38	76	5	13	51	19
iii. Cultivators unspecified	1	1	....	1	·1	2
(3) Agents, Managers of landed estates (not planters), clerks, rent collectors, etc. ..	2	1	1	2	3	3
(4) Farm Servants	3	2	·1	·6	13	4
(5) Field Labourers ..	136	155	5	72	298	152
(6) Fruit, flower, vegetable, betel, vine, arecanut,, etc., growers	1	1	4	1	·1	·3
(b) *Pasture*	*22*	*14*	*3*	*32*	*13*	*26*
(11) Cattle and buffalo breeders and keepers ..	13	8	1	18	10	15
(12) Sheep, goat and pig breeders	1	·2	....	2	....	·3
(13) Breeders of other animals (Horses, Mules, Camels, Asses, etc.) ..	....	..	....	....	....	....
(14) Herdsmen, Shepherds, Goatherds, etc. ..	8	6	2	12	3	10·3
(15) Birds, bees, etc. ..	....	....	....	....	....	....
(16) Silk Worms	....	....	....	....	....	....
2. Fishing and hunting	1	....	1	·3	6	2
Others	1	1	3	1	2	....
II. Exploitation of Minerals ..	*·3*	....	....	*1*	*1*	*·1*
III.—Industry	*119*	*104*	*220*	*133*	*76*	*134*
6. Textiles	28	24	46	33	11	34
8. Wood	14	11	25	16	13	14
9. Motal	7	5	10	9	4	7
12. Food Industries	4	4	19	3	3	2·5
13. Industries of the dress and the Toilet	21	19	32	21	18	31
Other Industries	45	41	88	51	27	45·5
IV.—Transport	*13*	*8*	*56*	*11*	*15*	*16*
V.—Trade	*67*	*49*	*145*	*77*	*36*	*91*
26. Trade in Textile	7	6	19	5	5	11
32. Hotels, Cafes, Restaurants, etc.	2	2	7	1	3	1
33. Other trade in food-stuffs ..	29	25	63	29	16	47
Other trade	28	16	56	42	12	32
VI.—Public Force	*11*	*7*	*98*	*5*	*6*	*15*
VII.—Public Administration	*20*	*15*	*128*	*10*	*16*	*28*
VIII.—Professions and Liberal Arts ..	*33*	*31*	*97*	*30*	*16*	*52*
IX.—Persons living on their own Income	*6*	*5*	*33*	*5*	*2*	*3*
X.—Domestic Service...	*3*	*2*	*15*	*5*	*4*	*1*
XI.—Insufficiently described occupations	*59*	*43*	*129*	*62*	*57*	*67*
XII.—Unproductive...	*5*	*4*	*16*	*5*	*1*	*7*

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SUBSIDIARY TABLE III—DISTRIBUTION OF THE AGRICULTURAL, INDUSTRIAL, COMMERCIAL AND PROFESSIONAL POPULATION IN NATURAL DIVISIONS

Natural Division	AGRICULTURE				INDUSTRY INCLUDING MINES			
	Population supported by agriculture	Proportion of agricultural population per 1,000 of district population	Percentage on Agricultural Population of		Population supported by Industry including Mines	Proportion of industrial Population per 1,000 of district Population	Percentage on Industrial Population of	
			Actual Workers	Dependents			Actual Workers	Dependents
1	2	3	4	5	6	7	8	9
Baroda State	**1,360,746**	**640**	**40**	**60**	**254,321**	**120**	**41**	**59**
Central Gujarat	439,215	717	40	60	63,671	104	44	56
Baroda City	5,468	58	42	58	20,727	220	47	53
North Gujarat	562,234	623	36	64	119,927	134	38	62
South Gujarat	254,407	748	50	50	26,207	77	46	54
Kathiawad	99,422	558	40	60	23,789	134	40	60

Natural Division	COMMERCE INCLUDING TRANSPORT				PROFESSIONS				OTHER OCCUPATIONS			
	Population supported by Commerce including Transport	Proportion of Commercial Population per 1,000 of District Population	Percentage on Commercial Population of		Population supported by Professions	Proportion of Professional Population per 1,000 of District Population	Percentage on Professional Population of		Population supported by other Occupations	Proportion of other Occupation followers per 1,000 of District Population	Percentage on other Occupation Followers of	
			Actual Workers	Dependents			Actual Workers	Dependents			Actual Workers	Dependents
1	10	11	12	13	14	15	16	17	18	19	20	21
Baroda State ..	**168,970**	**79**	**36**	**64**	**70,059**	**33**	**42**	**58**	**272,426**	**128**	**45**	**55**
Central Gujarat ..	34,804	57	37	63	18,800	31	43	57	56,250	91	47	53
Baroda City ..	18,975	201	38	62	9,145	97	42	58	40,397	424	45	55
North Gujarat ..	78,954	88	37	63	27,141	30	42	58	112,332	125	42	58
South Gujarat ..	17,167	51	36	64	5,627	16	40	60	36,964	108	51	49
Kathiawad ..	19,070	107	32	68	9,286	52	40	60	26,493	149	50	50

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SUBSIDIARY TABLE IV.—Occupations combined with Agriculture, where Agriculture is the Subsidiary Occupation

Occupations	Number per mille who are partially agriculturists					
	Baroda State	Central Gujarat	Baroda City	North Gujarat	South Gujarat	Kathiawad
1	2	3	4	5	6	7
TOTAL	**19**	**20**	**4**	**27**	**14**	**10**
I Exploitation of Animals and Vegetation	3	·2	..	8	2	·4
1. (a) *Agriculture*	..	..	..	..	..	..
(7) Fruit, flow vegetable, betel, vine, arecanut, etc. growers	24	52	..	23	..	..
(b) *Pasture*	51	26	..	57	20	4
2. Fishing and hunting	7	..	..	..	10	..
Others	6	12	..	23	3	..
II Exploitation of Minerals	69	..	..	90	..	..
III Industry	46	41	·1	61	50	25
6. Textiles	62	23	..	61	6	41
8. Wood	57	57	..	81	68	31
9. Metals	80	72	2·5	111	53	24
12. Food Industries	4	5	..	4	3	20
13. Industries of the Dress and the Toilet	54	76	..	64	41	18
Other Industries	43	39	..	53	71	14
IV Transport	9	17	..	9	11	11
V Trade	22	46	2	23	37	29
26. Trade in Textile	12	8	..	20	17	12
32. Hotels, Cafes, Restaurants, etc.	49	35	..	64	96	20
33. Other trade in food-stuffs	5	19	2	15	12	42
Other Trade	3	29	2	29	64	32
VI Public Force	7	177	26	38	88	2
VII Public Administration	36	48	6	39	86	7
VIII Profession and Liberal Arts	35	57	2	32	65	11
IX Persons living on their own income	31	71	1	34	41	5
X Domestic Service	10	23	7	7	4	..
XI Insufficiently described occupations	6	11	..	5	8	3
XII Unproductive	5	6	..	6	..	6

SUBSIDIARY TABLE V.—Occupations combined with Agriculture when Agriculture is the principal Occupation

Landlords (Rent receivers)		Cultivators (Rent payers)		Farm Servants—Field labourers	
Subsidiary Occupation	Number per 10,000 who follow it	Subsidiary Occupation	Number per 10,000 who follow it	Subsidiary Occupation	Number per 10,000 who follow it
1	2	3	4	5	6
Rent payers	103	Rent receivers	10	Rent receivers	2
Agricultural labourers	78	Agricultural labourers	57	Rent payers	6
Government employes of all kinds	121	General labourers	31	General labourers	21
Money lenders and grain dealers	175	Government employes of all kinds	59	Village watchmen	8
Other trades of all kinds	197	Money lenders and grain dealers	23	Cattle breeders and milkmen	12
Priests	31	Other traders of all kinds	31	Mill-hands	1
Clerks of all kinds (not Government)	22	Fishermen and boatmen	2	Fishermen and boatmen	·2
School Masters	22	Cattle breeders and milkmen	20	Rice pounders	....
Lawyers	1·4	Village watchmen	22	Traders of all kinds	1
Estate Agents and Managers	7·4	Weavers	7	Oil pressers	·6
Medical Practitioners	6	Barbers	14	Weavers	6
Artisans	33	Oil pressers	5	Potters	2
Others	306	Washermen	·4	Leather workers	·5
		Potters	21	Blacksmiths and carpenters	·5
		Blacksmiths and carpenters	20	Washermen	....
		Others	220	Others	101

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SUBSIDIARY TABLE VI.—Occupations of Females by Sub-classes and Selected Orders and Groups

Group No.	OCCUPATION	Number of Actual Workers		Number of Females per 1,000 Males
		Males.	Females	
1	2	3	4	5
	BARODA STATE	**620,232**	**245,789**	**396**
	I.—Exploitation of Animals and Vegetation	*399,793*	*170,134*	*426*
	1. Pasture and Agriculture	*399,055*	*169,964*	*426*
	(*a*) Ordinary cultivation	382,452	165,182	432
1	Income from rent of agricultural land	4,177	2,610	625
	i. Inamdars, Jagirdars and other alienated land-holders	797	226	284
	ii. Rent receiving Khatedars	3,380	2,384	705
2	Ordinary Cultivators	301,504	57,856	192
	i. Cultivating owners	277,008	49,883	180
	ii. Cultivating tenants	24,179	7,334	303
	iii. Cultivators unspecified	317	639	2,016
3	Agents, managers of landed estates (not planters) clerks, rent collectors, etc.	1,431	785	549
4	Farm Servants	3,347	254	76
5	Field labourers	71,993	103,677	1,440
7	(*b*) Growers of special products and market gardening—fruit, flower, vegetable, betel, vine, areca-nut, etc., growers	916	186	203
	(*c*) Forestry	644	81	126
9	Wood-cutters, fire-wood, catechu, rubber, etc., collectors and charcoal burners	544	79	145
	(*d*) Raising of farm stock	15,037	4,503	299
11	Cattle and buffalo breeders and keepers	9,318	3,034	326
12	Sheep, goat and pig breeders	752	39	52
14	Herdsmen, shepherds, goatherds, etc.	4,930	1,430	290
	2. Fishing and hunting	*738*	*480*	*651*
15	Fishing	737	480	651
	II.—Exploitation of Minerals	*38*	*122*	*3,211*
	III.—Industry	*77,142*	*27,492*	*356*
	6. Textiles	*18,178*	*8,599*	*472*
25	Cotton ginning, cleaning and pressing	4,723	1,376	291
26	Cotton spinning	650	725	1,115
27	Cotton sizing and weaving	10,390	5,295	510
29	Rope, twine and string	268	203	757
37	Dyeing, bleaching, printing, preparation and sponging of textiles	1,450	574	396
38	Lace, crepe, embroideries, fringes, etc., and insufficiently described textile industries	383	142	371
	7. Hides, skins and hard materials from the animal kingdom	*4,445*	*1,416*	*319*
39	Tanners, curriers, leather dressers and leather dyers, etc.	4,322	1,374	318
	8. Wood	*9,914*	*1,651*	*177*
43	Sawyers	872	22	25
44	Carpenters, turners and joiners, etc.	7,125	230	32
45	Basket-makers and other industries of woody materials including leaves and thatchers and builders working with bamboo reeds and similar materials	1,317	1,399	1,062
	9. Metals	*4,560*	*415*	*91*
48	Other workers in iron and makers of implements and tools principally or exclusively of iron	3,715	303	82
	10. Ceramics	*8,530*	*4,314*	*506*
55	Potters and earthen pipe and bowl makers	7,351	3,628	494
56	Brick and tile makers	1,147	625	545

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SUBSIDIARY TABLE VI.—Occupations of Females by Sub-Classes and Selected Orders and Groups—*contd.*

Group No.	OCCUPATION	Number of Actual Workers		Number of Females per 1,000 Males
		Males	Females	
1	2	3	4	5
	11. Chemical products properly so called	*3,285*	*7*	*229*
61	Manufacture and refining of vegetable oils	3,159	708	224
	12. Food industries	*7,884*	*2,242*	*1,190*
65	Rice pounders, and huskers and flour grinders	660	1,772	2,685
67	Grain parchers, etc.	114	108	947
68	Butchers	405	70	170
72	Sweetmeat makers and preparers of jam and condiments, etc.	255	40	157
75	Manufacturers of tobacco, opium and ganja	312	227	727
	13. Industries of dress and the toilet	*14,058*	*4,619*	*328*
77	Tailors, milliners, dress makers, darners, and embroiderers on linen	4,330	3,237	748
78	Shoe, boot and sandal makers	2,523	510	202
80	Washing, cleaning and dyeing	802	613	764
81	Barbers, hair dressers and wig makers	6,276	218	35
	15. Building industries	*5,227*	*1,022*	*198*
85	Lime burners, cement workers	435	56	129
86	Excavators and well-sinkers	113	357	3,159
87	Stone cutters and dressers	293	142	473
88	Brick layers and masons	4,041	437	108
89	Builders (other than buildings of bamboo or similar materials) painters, decorators of houses, tilers, plumbers, etc.	345	40	116
	18. Other miscellaneous and undefined industries	*7,231*	*2,248*	*339*
98	Workers in precious stones and metals, enamellers, imitation jewellery makers, gilders, etc.	2,571	73	28
103	Sweepers, scavangers, etc.	3,135	1,875	598
	IV.—Transport	*6,461*	*1,828*	*194*
	21. Transport by road	*3,050*	*871*	*285*
113	Owners, managers and employes (excluding personal servants) connected with mechanically driven vehicles (including trams)	114	32	281
114	Ditto. connected with other vehicles	1,492	829	556
117	Porters and messengers	1,102	2	2
	22. Transport by rail	*4,931*	*922*	*187*
118	Railway employes of all kinds other than coolies	3,755	799	213
119	Labourers employed on railway construction and maintenance and coolies and porters employed on railway premises	1,176	123	105
	V.—Trade	*40,956*	*9,865*	*241*
	24. Banks, establishments of credit, exchange and insurance.			
121	Bank managers, money lenders, exchange and insurance agents, money changers and brokers and their employes	3,852	1,244	326
	25. Brokerage, commission and export.			
122	Brokers, Commission Agents, commercial travellers, warehouse owners and employes	418	84	201
	26. Trade in textiles.			
123	Trade in piece-goods, wool, cotton, silk, hair and other textiles	4,157	294	71
	27. Trade in skins, leather and furs.			
124	Trade in skins, leather, furs, feathers, horn, etc., and articles made from these	196	38	194

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SUBSIDIARY TABLE VI.—OCCUPATIONS OF FEMALES BY SUB-CLASSES AND SELECTED ORDERS AND GROUPS—*contd.*

Group No.	OCCUPATION	NUMBER OF ACTUAL WORKERS		Number of Females per 1,000 Males
		Males	Females	
1	2	3	4	5
	28. Trade in wood.			
125	Trade in wood (not fire wood) cork, bark, bamboo, thatch, etc., and articles made from these	359	133	37
	32. Hotels, cafes, restaurants, etc.	*1,325*	*153*	*115*
129	Vendors of wine, liquors, aerated waters and ice	789	103	131
130	Owners and managers of hotels, cookshops, sarais, etc., and their employes	536	50	93
	33. Other trade in food stuffs	*17,627*	*5,812*	*330*
131	Fish dealers	88	23	261
132	Grocers and sellers of vegetable oil, salt and other condiments	1,564	174	111
133	Sellers of milk, butter, ghee, poultry, eggs, etc.	948	740	781
134	Sellers of sweetmeats, sugar, gur and molasses	707	79	112
135	Cardamom, betel leaf, vegetables, fruit and areca nut sellers.	4,052	3,411	842
136	Grain and pulse dealers	9,098	1,102	121
137	Tobacco, opium, ganja, etc., sellers	1,042	154	148
138	Dealers in sheep, goats and pigs	37	6	162
139	Dealers in hay, grass and fodder	91	123	1,352
	34. Trade in clothing and toilet articles.			
140	Trade in ready made clothing and other articles of dress and the toilet (hats, umbrellas, socks, ready-made shoes, perfumes, etc.)	327	11	34
	35. Trade in furniture	*454*	*30*	*66*
141	Trade in furniture, carpets, curtains and bedding	78	18	231
	37. Trade in means of transport	*1,969*	*208*	*106*
	38. Trade in fuel.			
147	Dealers in fire wood, charcoal, coal, cowdung, etc.	512	283	555
	39. Trade in articles of luxury and those pertaining to letters and the arts and sciences	*1,176*	*231*	*196*
148	Dealers in precious stones, jewellery (real and imitation) clocks, optical instruments, etc.	624	37	59
149	Dealers in common bangles, bead, necklaces, fans, small articles, toys, hunting and fishing tackle, flowers, etc.	401	177	441
150	Publishers, book-sellers, stationers, dealers in music, pictures, musical instruments and curiosities	151	17	112
	40. Trade of other sorts	*7,359*	*1,224*	*166*
151	Dealers in rags, stable refuse, etc.	121	38	298
152	General store-keepers and shop-keepers otherwise unspecified	1,637	196	120
153	Itinerant traders, pedlars, hawkers, etc.	896	447	499
154	Other traders (including farmers of pounds, tolls and markets)	4,705	543	115
	VI.—PUBLIC FORCE	*10,579*	....	....
	VII.—45. PUBLIC ADMINISTRATION	*13,996*	*807*	*58*
161	Service of the State	10,418	443	43
162	Service of Indian and foreign States	483	29	60
163	Municipal and other local (not village) service	1,410	262	186
164	Village Officials and servants other than watchmen	1,685	73	43
	VIII.—PROFESSIONS AND LIBERAL ARTS	*24,663*	*4,543*	*184*
	46. Religion	*14,903*	*3,732*	*250*
165	Priests, Ministers, etc.	7,052	1,271	180
166	Religious mendicants, inmates of monasteries, etc.	5,037	2,010	399
167	Catechists, readers, church and mission service	162	24	148
168	Temple, burial or burning ground service, pilgrim conductors, circumcisers	2,652	427	161
	48. Medicine	*1,079*	*161*	*149*

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SUBSIDIARY TABLE VI.—Occupations of Females by Sub-classes and Selected Orders and Groups—*concld.*

Group No.	OCCUPATION	Number of Actual Workers		Number of Females per 1,000 Males
		Males	Females	
1	2	3	4	5
171	Medical practitioners of all kinds, including dentists, oculists and veterinary surgeons..	820	39	48
172	Midwives, vaccinators, compounders, nurses, masseurs, etc.	259	122	471
	49. Instructions	*5,166*	*430*	*83*
173	Professors and teachers of all kinds	4,411	399	90
	50. Letters and arts and sciences	*2,984*	*220*	*74*
177	Authors, editors, journalists, artists, photographers, sculptors, astronomers, meteorologists, botanists and astrologers, etc.	511	23	45
178	Music composers and masters, players on all kinds of musical instruments (not Military) singers, actors and dancers	1,685	169	100
	IX.—*51.*—Persons living principally on their income.			
180	Proprietors (other than of agricultural land) fund and scholarship holders and pensioners	2,873	1,436	500
	X.—*52.*—Domestic service	*1,955*	*2,849*	*1,457*
181	Cooks, water carriers, door-keepers, watchmen and other indoor servants	1,365	2,740	2,007
182	Private grooms, coachmen, dog-boys, etc.	552	109	197
	XI.—Insufficiently described occupations			
	53. General terms which do not indicate a definite occupation	*35,207*	*24,405*	*693*
185	Cashiers, accountants, book-keepers, clerks and other employes in unspecified offices, warehouses and shops	15,056	1,209	80
187	Labourers and workmen otherwise unspecified	19,632	23,196	1,182
	XII.—Unproductive	*4,168*	*1,988*	*477*
	54. Inmates of jails, asylums and hospitals			
188	Inmates of jails, asylums and almhouses	718	45	63
	55. Beggars, vagrants, prostitutes	*3,344*	*1,594*	*477*
189	Beggars, vagrants, witches, wizards, etc.	3,339	1,525	457
190	Procurers and prostitutes	5	69	13,800
191	*56.—Other unclassified non-productive industries*	*106*	*350*	*3,287*

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SUBSIDIARY TABLE VII.—Selected Occupations

Group No.	Occupation	Population supported in 1921	Population supported in 1911	Population supported in 1901	Percentage of Variation from 1901 to 1921	Percentage of Variation from 1911 to 1921
1	2	3	4	5	6	7
	Class. A.—Production of Raw Materials ..	**1,412,330**	**1,332,881**	**1,061,632**	+ **33·0**	+ **5·96**
	SUB-CLASSI.—EXPLOITATION OF ANIMALS AND VEGETATION.	*1,411,663*	*1,332,756*	*1,061,321*	+ *33·0*	+ *5·92*
	Order 1. *Pasture and Agriculture*	*1,408,944*	*1,329,961*	*1,059,674*	+ *30·12*	+ *5·94*
1	Income from rent of Agricultural land	18,965	25,681	78,569	— 75·87	— 26·15
2	Ordinary Cultivators	1,039,217	944,994	556,119	+ 86·87	+ 9·97
3	Agents, Managers of landed estates (not planters), clerks, rent-collectors, etc.	4,444	211	1,950	+ 127·99	+2006·16
4-5	Farm servants and field labourers	295,815	313,479	372,964	— 20·68	— 5·64
6	Tea, Coffee, Cinchona, rubber and indigo plantations.	....	....	85	....	....
7	Fruit, flower, vegetable, betel, vine, arecanut, etc., growers.	2,305	2,536	4,942	— 53·36	— 9·11
9	Wood cutters; fire-wood, catechu, rubber, etc., collectors and charcoal burners.	1,340	281	1,145	+ 17·0	+ 376·87
11	Cattle and buffalo breeders and keepers	27,536	25,330	8,542	+ 222·36	+ 8·31
12	Sheep, goat and pig breeders	1,624	9,740	7,698	— 79	— 83·43
13	Breeders of other animals (horses, mules, camels, asses, etc.)	79	1,536	831	— 90·5	— 94·86
14	Herdsmen, shepherds, goatherds, etc.	17,358	5,633	25,820	— 32·79	+ 208·15
	Order 2. *Fishing and hunting*	*2,719*	*2,795*	*1,647*	+ *65*	— *2·72*
17	Fishing	2,710	2,783	1,330	+ 103·76	— 2·84
	SUB-CLASS II.—EXPLOITATION OF MINERALS	*667*	*125*	*311*	+ *114·47*	— *41·67*
	Class B.—Preparation and Supply of Material Substances.	**422,624**	**396,588**	**386,644**	+ **9·3**	+ **6·56**
	SUB-CLASS III.—INDUSTRY	*253,654*	*250,050*	*234,840*	+ *8·0*	+ *1·4*
	Order 6. *Textiles*	*56,789*	*52,433*	*44,935*	+ *26·3*	+ *8·3*
25	Cotton ginning, cleaning and pressing	11,649	10,635	4,415	+ 163·85	+ 9·52
26-27	Cotton Spinning, Sizing and Weaving	39,272	33,802	35,128	+ 11·79	+ 16·18
29	Rope, twine and string	817	491	958	— 14·72	+ 66·39
31-33	Wool carding and spinning, weaving of woollen blankets and carpets.	337	92	535	— 37·01	+ 266·3
34-35	Silk spinners and weavers	635	1,191	138	+ 360·1	— 46·69
37	Dyeing, bleaching, printing preparation and sponging of textiles.	4,365	3,966	3,555	+ 22·79	+ 10
	Order 7. *Hides, skins and hard materials from the animal kingdom.*	*15,964*	*16,032*	*19,300*	— *17·29*	— *0·42*
39	Tanners, curriers, leather dressers and dyers, etc.	15,474	14,967	18,111	— 14·6	+ 3·38
40	Makers of leather articles such as trunks, water-bags, saddlery or harness, etc., etc.	128	1,035	1,250	— 89·76	— 87·63
42	Bone, ivory, horn, shell, etc., workers (except button.)	320	30	29	+1003·45	+ 966·67
	Order 8. *Wood*	*33,349*	*26,275*	*16,256*	+ *105·15*	+ *26·92*
43-44	Sawyers, carpenters, turners and joiners, etc. ..	24,050	20,969	12,561	+ 91·46	+ 14·69
45	Basket makers and other industries of woody material, including leaves and thatches and builders working with bamboo reeds and similar materials.	6,299	5,306	3,695	+ 70·47	+ 18·71
	Order 9. *Metals*	*14,809*	*16,150*	*10,758*	+ *38·21*	— *8·0*
46	Forging and rolling of iron and other metals ..	136	....	102	+ 33·33	....
49	Workers in brass, copper and bell metal	2,089	2,195	405	+ 415·8	— 4·88
50	Workers in other metals except precious metals, (tin, zinc, lead, quick silver, etc.)	590	277	576	+ 2·43	+ 113·0
	Order 10. *Ceramics.*	*28,120*	*26,743*	*24,446*	+ *15·0*	+ *5·15*
56	Brick and tile makers	3,358	809	1,642	+ 104·51	+ 315·0
	Order 11. *Chemical products properly so called and analogous.*	*11,310*	*10,953*	*10,191*	+ *10·98*	+ *3·26*
	Order 12. *Food Industries*	*8,248*	*11,314*	*12,069*	— *31·66*	— *37·1*
66	Bakers and biscuit makers	127	12	347	— 63·4	+ 958·33
67	Grain parchers, etc.	575	310	918	— 37·36	+ 20·97

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SUBSIDIARY TABLE VII.—SELECTED OCCUPATIONS—*contd.*

Group No.	OCCUPATION	Population supported in 1921	Population supported in 1911	Population supported in 1901	Percentage of Variation from 1901 to 1921	Percentage of Variation from 1911 to 1921
1	2	3	4	5	6	7
68	Butchers	1,470	1,641	1,317	+ 11·61	— 10·42
70	Butter, cheese and ghee makers	12	....	177	— 93·23	....
72	Sweetmeat makers, preparers of jam and condiments, etc.	714	1,538	868	— 17·74	—53·58
73	Brewers and distillers	41	248	731	— 94·4	— 83·47
74	Toddy drawers	92	884	54	+ 70·37	— 89·59
75	Manufacturers of tobacco, opium and ganja ..	1,215	1,328	179	+ 578·77	— 8·51
	ORDER 13. *Industries of dress and toilet* ..	*45,485*	*45,632*	*47,034*	— *3·29*	— *·32*
78	Shoe, boot and sandal makers	8,258	8,266	9,504	— 13·11	— ·82
79	Other industries pertaining to dress-gloves, socks, gaiters, belts.	215	127	238	— 9·67	+ 69·29
81	Barbers, hair-dressers and wig makers	18,471	19,787	19,837	— 6·89	— 6·66
82	Other industries connected with the toilet (tattooers, shampooers, bath-houses, etc.)	11	....	219	— 95·0	....
86	ORDER 15. *Building Industries*	*14,866*	*12,931*	*15,327*	— *3·01*	+ *14·96*
87	Excavators and well-sinkers	666	1,222	4,070	— 82·01	— 45·5
–88	Stone-cutters and dressers, bricklayers and masons	12,169	9,253	9,091	+ 33·86	+ 31·51
	ORDER 18. *Other Miscellaneous and undefined industries.*	*24,899*	*31,097*	*32,041*	— *22·29*	— *20·9*
98	Workers in precious stones and metals, enamellers, imitation jewellery makers, gilders, etc.	6,294	10,158	8,813	— 28·58	— 38·04
99	Makers of bangles or beads or necklaces of other materials than glass and makers of spangle, rosaries, lingams and sacred threads.	5,528	13	2,669	+ 107·12	+ 424 23
102 –103	Contractors for the disposal of refuse, dust, etc., and sweepers, scavengers, etc.	10,207	19,590	18,300	— 44·23	— 47.89
	SUB-CLASS IV—TRANSPORT	*27,954*	*16,638*	*8,742*	+ *219·77*	+ *68·0*
	ORDER 20. *Transport by water*	*3,015*	*1,861*	*4,344*	— *30·59*	+ *62·0*
107	Ship owners and their employés, ship brokers, ships' officers, engineers, mariners and firemen.	....	....	587	....	....
108–109	Persons (including labourers) employed on the maintenance of streams, rivers and canals including construction.	101	41	3,509	— 97·12	+ 146·34
110	Boat owners, boatmen and towmen	2,613	1,816	240	+ 988·75	+ 43·88
	ORDER 21. *Transport by road*	*8,897*	*5,960*	*1,704*	+ *422·0*	+ *49·3*
113–114	Owners, managers and employés (including personal servants) connected with mechanically driven (including trams) as well as other vehicles.	6,068	4,534	818	+ 641·8	+ 33·85
115	Palki, etc., bearers and owners	....	12	160	....	....
116	Pack elephant, camel, mule, ass and bullock owners and drivers.	489	850	320	+ 52·84	— 42·47
117	Porters and messengers	2,185	236	406	+ 438·18	+ 825·85
	ORDER 22. *Transport by rail*	*14,499*	*6,458*	*2,129*	+ *581·0*	+ *124·5*
118	Railway employes of all kinds other than coolies .	12,036	6,226	2,129	+ 465·33	+ 93·32
119	Labourers employed on railway construction and maintenance and coolies and porters employed on railway premises.	2,463	232	....	....	+ 961·63
	ORDER 23. *Post Office, telegraph and telephone services.*	*1,543*	*2,359*	*565*	+ *173·09*	— *34·59*
	SUB-CLASS V.—TRADE	*141,016*	*129,900*	*143,062*	— *1·43*	+ *8·56*
121	ORDER 24. *Banks, establishments of credit exchange and insurance (Bank managers, money lenders, exchange and insurance agents, money changers and brokers and their employés).*	*15,751*	*17,600*	*16,582*	— *5·01*	— *10·5*
122	ORDER 25. *Brokerage, commission and export (Broker, commission agents, commercial travellers, ware-house owners and employés).*	*1,775*	*1,200*	*1,852*	— *4·16*	+ *47·92*
123	ORDER 26. *Trade in textiles (Trade in piece goods, wool, cotton, silk, hair and other textiles).*	*13,875*	*11,131*	*9,892*	+ *40·26*	+ *24·65*
124	ORDER 27. *Trade in skins, leather and furs (Trade in skins, leather, furs, feathers, horns, etc., and articles made from these).*	*607*	*1,688*	*1,742*	— *65·15*	— *64·01*
125	ORDER 28. *Trade in wood (Trade in wood not firewood), cork, bark, bamboo, thatch, etc., and articles made from these.*	*1,267*	*930*	*319*	+ *297·18*	+ *36·24*
126	ORDER 29. *Trade in metals (Trade in metals, machinery, knives, tools, etc.)*	*772*	*954*	*31*	+*2,390·32*	— *19.08*

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SUBSIDIARY TABLE VII.—SELECTED OCCUPATIONS—*contd.*

Group No	Occupation	Population supported in 1921	Population supported in 1911	Population supported in 1901	Percentage of Variation from 1901 to 1921	Percentage of Variation from 1911 to 1921
1	2	3	4	5	6	7
127	ORDER 30. *Trade in pottery, bricks and tiles* ..	345	94	2,595	— 86·71	+ 267·02
128	ORDER 31. *Trade in chemical products (drugs, dyes, paints, petroleum, explosives, etc.)*	528	256	947	— 44·25	+ 106·25
	ORDER 32. *Hotels, cafés, restaurants, etc.*	4,025	3,390	2,297	+ 75·22	+ 18·73
129	Vendors of wine, liquors, aerated waters and ice ..	2,684	2,779	2,090	+ 28·42	— 3·42
130	Owners and managers of hotels, cookshops, sarais, etc., and their employes.	1,341	611	297	+ 547·82	+ 119·47
	ORDER 33. *Other trade in food-stuffs*	61,312	54,718	53,554	+ 14·52	+ 12·05
131	Fish dealers	263	1,696	1,844	85·74	84·5
132	Grocers and sellers of vegetable oil, salt, and other condiments.	1,898	4,556	7,456	34·31	+ 7·51
133	Sellers of milk, butter, ghee, poultry, eggs, etc. ..	3,801	3,249	2,794	+ 36·04	+ 16·98
134	Sellers of sweetmeats, sugar, gur and molasses ..	2,031	637	1,067	+ 83·13	+ 219·30
135	Cardamom, betel leaf, vegetables, fruits and areca-nut sellers.	16,416	17,814	13,372	+ 22·76	7·85
136	Grain and pulse dealers	30,300	23,864	19,341	+ 56·66	+ 26·96
137	Tobacco, opium, ganja, etc., sellers	3,118	1,811	1,624	+ 91·99	+ 72·17
138	Dealers in sheep, goats and pigs	77	541	2,054	96·26	85·77
139	Dealers in hay, grass and fodder	405	550	3,982	89·83	26·37
140	ORDER 34. *Trade in clothing and toilet articles [Trade in ready made clothing and other articles of dress and the toilet (hats, umbrellas, socks, ready made shoes, perfumes, etc]*	1,036	1,425	3,950	73·78	27·3
	ORDER 35. *Trade in furniture*	1,118	523	2,240	50·09	+ 113·76
141	Trade in furniture, carpets, curtains and bedding ..	283	404	405	30·13	29·43
143	ORDER 36. *Trade in building materials (Trade in building materials other than bricks, tiles and wooden materials).*	678	489	955	29·01	+ 38·65
144–146	ORDER 37. *Trade in means of transport*	6,008	1,754	9,051	33·63	+ 242·53
147	ORDER 38. *Trade in fuel—Dealers in fire-wood, charcoal, coal, cow dung, etc.*	1,838	1,581	3,997	54·02	+ 16·31
	ORDER 39. *Trade in articles of luxury and those pertaining to letters and the arts and sciences.*	4,187	2,670	5,068	17·39	+ 36·81
148	Dealers in precious stones, jewellery (real and imitation), clocks, optical instruments, etc.	2,459	1,759	161	+ 1,427·32	+ 39·79
149	Dealers in common bangles, bead necklaces, fans, small articles, toys, hunting and fishing tackle, flowers, etc.	1,273	709	4,484	71·62	+ 79·54
150	Publishers, book-sellers, stationers, dealers in music, pictures, musical instruments and curiosities	455	202	423	+ 7·56	+ 125·24
	ORDER 40. *Trade of other sorts*	25,894	29,497	28,010	— 7·55	— 12·22
151	Dealers in rags, stable refuse, etc.	249	97	....	....	+ 156·70
153	Itinerant traders, pedlars, hawkers, etc.	5,734	279	1,488	+ 285·34	+ 1,955·23
	Class C.—Public Administration and Liberal Arts	**134,780**	**148,275**	**127,179**	+ **5·97**	— **9·11**
	SUB-CLASS VI. PUBLIC FORCE	23,228	26,904	4,249	+ 446·66	— 13·67
	ORDER 41. *Army*	7,825	11,560	3,470	+ 125·56	— 32·31
155	Army (Imperial)	121	1,009	271	— 55·32	— 88·01
156	Army (Indian States)	7,704	10,551	3,199	+ 140·83	— 26·98
	ORDER 44. *Police*	15,403	15,344	779	+ 18·77	+ ·38
160	Village watchmen	5,401	5,425	22	+ 244·45	— ·44
	SUB-CLASS VII.—45. PUBLIC ADMINISTRATION.	41,493	38,217	63,698	— 34·86	+ 8·57
161	Service of the State	30,965	33,318	38,685	— 19·96	— 7·06
162	Service of Native and Foreign States	1,682	376	1,905	— 11·71	+ 347·34
163	Municipal and other local (not village) service ..	3,973	1,959	5,565	— 28·6	+ 102·81
164	Village officials and servants other than watchmen	4,873	2,564	17,543	— 72·22	+ 90·05
	SUB-CLASS VIII.—PROFESSIONS AND LIBERAL ARTS.	70,059	74,692	47,990	+ 45·96	— 7
	ORDER 46. *Religion*	43,367	51,985	34,863	+ 26·69	— 16·6

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SUBSIDIARY TABLE VII.—SELECTED OCCUPATIONS—*concld.*

Group No.	OCCUPATION	Population supported in 1921	Population supported in 1911	Population supported in 1901	Percentage of Variation from 1901 to 1921	Percentage of Variation from 1911 to 1921
1	2	3	4	5	6	7
165	Priests, ministers, etc.	19,403	39,101	25,732	— 24·58	— 50·37
166	Religious mendicants, inmates of monasteries, etc.	17,238	7,137	2,656	+ 548·8	— 141·46
167	Catechists, readers, church and mission service ..	610	922	3,333	— 81·7	— 33·84
168	Temple, burial or burning ground service, pilgrim conductors, circumcisers.	6,116	4,825	3,142	+ 94·65	+ 26·75
	ORDER 47. *Law*	*2,074*	*1,676*	*1,460*	+ *42·05*	+ *24·19*
169	Lawyers of all kinds including Kazies, law agents and mukhtyars.	1,768	1,212	1,297	+ 36·31	+ 45·87
170	Lawyers, clerks, petition writers, etc.	306	458	163	+ 87·7	— 33·2
	ORDER 48. *Medicine*	*3,580*	*3,079*	*2,602*	+ *37·5*	+ *16·27*
171	Medical practitioners of all kinds including dentists, oculists and veterinary surgeons.	2,738	1,950	2,001	+ 36·83	+ 40·4
172	Midwives, vaccinators, compounders, nurses, masseurs, etc.	842	1,129	602	+ 39·9	— 25·4
173–174	ORDER 49. *Instruction (Professors and teachers of all kinds, and clerks and servants connected with education).*	*13,514*	*9,299*	*5,500*	+ *145·29*	+ *43·8*
	ORDER 50. *Letters and Arts and Sciences*	7,524	8,559	3,573	+ 110·58	— 12·1
175	Public scribes, stenographers, etc.	....	....	62	....	....
178	Music composers and masters, players of all kinds of musical instruments (not Military), singers actors and dancers.	4,239	5,607	1,278	+ 231·7	— 24·39
180	**Class D.—Miscellaneous**	**156,788**	**163,516**	**388,470**	— **59·6**	— **4·1**
	SUB-CLASS IX.—51. PERSONS LIVING ON THEIR INCOME (PROPRIETORS OTHER THAN OF AGRICULTURAL LAND) FUND AND SCHOLARSHIP HOLDERS AND PENSIONERS.	*11,584*	*8,462*	*11,233*	+ *3·12*	+ *36·8*
	SUB-CLASS X.—52. DOMESTIC SERVICE..	*9,050*	*3,510*	*52,267*	— *82·69*	+ *157·8*
181	Cooks, water-carriers, door-keepers, watchmen and other indoor servants.	7,709	3,349	50,578	— 84·76	+ 130·2
182	Private grooms, coachmen, dog boys, etc. ..	1,249	161	1,689	— 26·05	+ 675·78
	SUB-CLASS XI.—53. INSUFFICIENTLY DESCRIBED OCCUPATIONS (GENERAL TERMS WHICH DO NOT INDICATE A DEFINITE OCCUPATION).	*125,622*	*142,285*	*280,225*	— *55·17*	— *11·77*
184	Manufacturers, businessmen and contractors otherwise unspecified.	1,227	....	430	+ 185·35	....
185	Cashiers, Accountants, Book-keepers, clerks and other employers in unspecified offices, warehouses and shops.	38,718	26,354	31,240	+ 23·94	+ 46·91
186	Mechanics otherwise unspecified	199	118	....	....	+ 68·64
	SUB-CLASS XII.—UNPRODUCTIVE.. ..	*10,532*	*9,259*	*44,745*	— *72·46*	+ *13·75*
188	ORDER 54. *Inmates of jails, asylums and hospitals.*	*88*	*802*	*3,227*	— *72·71*	+ *10·22*
189–191	ORDER 55–56 *Beggars, vagrants, prostitutes* ..	*8,871*	*8,457*	*41,518*	— *78·63*	+ *4·9*

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SUBSIDIARY TABLE VIII.—Occupation of Selected Castes

Caste and Occupation	Number per 1,000 workers engaged on each occupation	Number of female workers per 1,000 males
1	2	3
Ahir		
Cattle breeders and Graziers	*70*	*59*
Cultivators	404	70
Field labourers, etc.	309	1,667
Labourers unspecified	47	507
Others	70	47
Bava		
Devotees	*727*	*208*
Cultivators	134	115
Labourers unspecified	25	471
Beggars, etc.	1	111
Others	119	584
Bhangi		
Scavengers	*532*	*552*
Cultivators	59	85
Field labourers, etc.	275	977
Labourers unspecified	89	521
Others	45	401
Bharwad		
Cattle breeders and Graziers	*787*	*239*
Cultivators	33	464
Field labourers, etc.	111	5,817
Labourers unspecified	41	3,576
Others	28	444
Bhavsar		
Calenderers and Dyers	*338*	*844*
Industries	130	411
Trade	321	229
Labourers unspecified	190	1,217
Others	111	199
Bhoi		
Fishermen and Palki-bearers	*127*	*329*
Cultivators	214	135
Field labourers	197	675
Labourers unspecified	202	1,098
Others	260	360
Brahmabhat		
Bards and Genealogists	*242*	*250*
Cultivators	338	111
Trade	55	48
Labourers unspecified	65	1,013
Others	300	165
Brahman—Anavla		
Cultivators	*785*	*134*
Trade	24	27
Public Administration	57	....
Arts and Professions	39	8
Others	95	61
Brahman—Audich		
Priests	*207*	*323*
Cultivators	218	198
Arts and Professions	175	143
Laborers unspecified	74	1,019
Others	326	150
Brahman—Deshastha		
Priests	*96*	*123*
Public Administration	314	2
Arts and Professions	166	223
Persons living on their income	91	479
Others	333	143
Brahman—Mewada		
Priests	*100*	*305*
Cultivators	320	181
Arts and Professions	169	58
Labourers unspecified	96	271
Others	315	496
Brahman—Modh		
Priests	*64*	*257*
Cultivators	224	146
Arts and Professions	205	198
Labourers unspecified	60	1,773
Others	347	282
Brahman—Nagar		
Priests	*164*	*533*
Income from rent of land	87	874
Public Administration	78	....
Arts and Professions	189	172
Others	382	201
Brahman—Tapodhan		
Temple servants	*114*	*399*
Cultivators	287	227
Industries	179	26
Arts and Professions	115	305
Others	305	533
Chamar		
Tanners	*409*	*370*
Cultivators	157	142
Field labourers, etc.	294	1,221
Labourers unspecified	107	1,216
Others	33	312
Darji		
Tailors	*964*	*750*
Cultivators	16	110
Raisers of livestock, milkmen, herdsmen, etc.	....	1,000
Transport	....	....
Others	20	1,180
Dhed		
Weavers	*242*	*474*
Cultivators	175	194
Field labourers, etc.	374	1,265
Labourers unspecified	128	875
Others	81	363
Garoda		
Priests	*566*	*310*
Field labourers, etc.	81	3,600
Labourers unspecified	56	2,133
Beggars, etc.	180	358
Others	117	1,191

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SUBSIDIARY TABLE VIII.—OCCUPATION OF SELECTED CASTES—*contd.*

Caste and Occupation	Number per 1,000 workers engaged on each occupation	Number of female workers per 1,000 males
1	2	3
GHANCHI		
Oil pressers	*504*	*249*
Cultivators	26	155
Trade	250	302
Labourers unspecified	123	1,451
Others	97	182
GOLA		
Rice pounders	*488*	*922*
Cultivators	20	125
Trade	130	340
Labourers unspecified	236	3,659
Others	126	36
GOSAIN		
Devotees	*513*	*184*
Cultivators	309	113
Field labourers, etc.	50	1,643
Beggars, etc.	3	....
Others	125	332
HAJAM		
Barbers	*651*	*26*
Cultivators	128	203
Public Administration	13	20
Arts and Professions	12	603
Others	196	2,825
KACHHIA		
Cultivators and vegetable sellers	*529*	*441*
Field labourers, etc.	12	1,118
Industries	251	146
Labourers unspecified	43	2,316
Others	165	123
KANBI—ANJANA		
Cultivators	*845*	*331*
Income from rent of land	11	1,525
Field labourers, etc.	108	3,930
Labourers unspecified	10	2,093
Others	26	584
KANBI—KADWA		
Cultivators	*836*	*212*
Income from rent of land	1	3,150
Field labourers, etc.	105	4,289
Labourers unspecified	15	1,112
Others	43	298
KANBI—KARADIA		
Cultivators	*980*	*692*
Field labourers, etc.	8	4,250
Public Administration	....	....
Labourers unspecified	3	....
Others	9	1,923
KANBI—LEWA		
Cultivators	*817*	*0*
Income from rent of land	29	412
Field labourers, etc.	72	1,032
Contractors, clerks, etc.	9	....
Others	73	165
KOLI		
Agricultural labourers	*337*	*1,058*
Cultivators	546	149
Industries	15	372
Labourers unspecified	56	830
Others	52	263
KUMBHAR		
Potters	*60*	*493*
Cultivators	197	159
Field labourers, etc.	82	1,786
Labourers unspecified	45	1,763
Others	76	203
LUHANA		
Traders	*651*	*88*
Cultivators	95	72
Field labourers, etc.	46	1,221
Labourers unspecified	51	1,690
Others	157	286
LUHAR		
Blacksmiths	*567*	*115*
Cultivators	157	197
Field labourers, etc.	66	4,757
Industries	82	64
Others	128	1,765
MACHHI		
Fishermen	*318*	*407*
Cultivators	266	170
Field labourers, etc.	207	2,136
Labourers unspecified	67	1,495
Others	142	443
MARATHA—KSHATRIYA		
Military and dominant	*259*	*23*
Public force	27	....
Public administration	185	22
Labourers unspecified	125	1,991
Others	404	348
MOCHI		
Shoe-makers	*791*	*190*
Cultivators	49	1,297
Field labourers, etc.	61	2,015
Labourers unspecified	31	3,682
Others	68	452
RABARI		
Graziers and cattle breeders	*653*	*223*
Cultivators, etc.	228	50
Field labourers, etc.	55	2,058
Labourers unspecified	38	3,000
Others	26	613
RAJPUT		
Military and dominant	*31*	*94*
Income from rent of land	29	551
Cultivators	688	113
Field labourers, etc.	101	2,103
Others	151	293

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SUBSIDIARY TABLE VIII.—OCCUPATION OF SELECTED CASTES—*contd.*

Caste and Occupation	Number per 1,000 workers engaged on each occupation	Number of female workers per 1,000 males
1	2	3
AVALIA		
Tape weavers and drummers ..	*150*	*65*
Field labourers, etc.	64	911
Trade	318	988
Labourers unspecified	163	490
Others	305	156
SATHAWARA		
Vegetable growers and sellers ..	*338*	*3,675*
Cultivators	226	172
Industries	277	29
Labourers unspecified	63	1,166
Others	96	782
SHENVA		
Village watchmen	*32*	*13*
Cultivators	168	250
Field labourers, etc.	412	639
Labourers unspecified	247	669
Others	141	656
SONI		
Goldsmiths	*863*	*16*
Industries	18	1,462
Trade	8	333
Public Administration	4	....
Others	107	2,712
SUTAR		
Carpenters	*761*	*20*
Cultivators	83	390
Industries	32	761
Trade	5	1,053
Others	119	4,011
TARGALA		
Actors, dancers, singers, etc. ..	*346*	*26*
Cultivators	227	206
Field labourers, etc.	81	5,250
Labourers unspecified	102	17,000
Others	244	302
VAGHARI		
Hunters and Fowlers	*40*	*725*
Cultivators	163	152
Field labourers	256	543
Labourers unspecified	218	598
Others	313	489
VAGHER		
Military and Dominant	*764*	*33*
Field labourers	3	1,000
Public administration	8	....
Labourers unspecified	119	525
Others	106	659
VANIA—DISHAVAL		
Traders	*614*	*118*
Public administration	48	11
Persons living on their income ..	110	1,069
Labourers unspecified	31	96
Others	197	154
VANIA—LAD		
Traders	*502*	*52*
Public administration	80	5
Contractors, clerks, etc.	103	....
Labourers unspecified	17	46,000
Others	298	401
VANIA—SHRIMALI		
Traders	*540*	*131*
Public administration	69	....
Contractors, clerks, etc.	46	....
Labourers unspecified	29	840
Others	316	275
BHIL		
Cultivators and agricultural labourers. — *Hindu* ..	*879*	*612*
Cultivators and agricultural labourers. — *Animist* ..	*886*	*334*
Industries .. .. — Hindu ..	9	1,020
Industries .. .. — Animist ..	46	1,375
Public administration — Hindu ..	15	19
Public administration — Animist ..	12	54
Labourers unspecified. — Hindu ..	24	902
Labourers unspecified. — Animist ..	43	239
Others .. .. — Hindu ..	73	203
Others .. .. — Animist ..	53	259
CHODHRA		
Cultivators and agricultural labourers. — *Hindu* ..	*701*	*601*
Cultivators and agricultural labourers. — *Animist* ..	*880*	*601*
Field labourers .. — Hindu ..	128	1,270
Field labourers .. — Animist ..	62	879
Raisers of livestock, milkmen and herdsmen. — Hindu ..	5	....
Raisers of livestock, milkmen and herdsmen. — Animist ..	12	227
Public administration. — Hindu ..	....	....
Public administration. — Animist ..	2	....
Labourers unspecified. — Hindu ..	110	846
Labourers unspecified. — Animist ..	22	324
Others .. .. — Hindu ..	56	28
Others .. .. — Animist ..	22	737
DHANKA		
Cultivators and agricultural labourers .. — *Hindu* ..	*917*	*771*
Cultivators and agricultural labourers .. — *Animist* ..	*876*	*626*
Industries .. .. — Hindu ..	7	917
Industries .. .. — Animist ..	5	....
Transport .. .. — Hindu ..	5	....
Transport .. .. — Animist ..	11	....
Labourers unspecified. — Hindu ..	32	1,130
Labourers unspecified. — Animist ..	43	1,000
Others .. .. — Hindu ..	39	452
Others .. .. — Animist ..	65	542
DHODIA		
Cultivators and agricultural labourers — *Hindu* ..	*672*	*915*
Cultivators and agricultural labourers — *Animist* ..	*846*	*1,123*
Field labourers etc. .. — Hindu ..	14	....
Field labourers etc. .. — Animist ..	86	18
Raisers of livestock, milkmen and herdsmen. — Hindu ..	9	2,500
Raisers of livestock, milkmen and herdsmen. — Animist ..	9	257
Industries .. .. — Hindu ..	45	545
Industries .. .. — Animist ..	9	1,119
Labourers unspecified. — Hindu ..	142	9,000
Labourers unspecified. — Animist ..	24	984
Others .. .. — Hindu ..	118	71
Others .. .. — Animist ..	26	47

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SUBSIDIARY TABLE VIII.—OCCUPATION OF SELECTED CASTES—*contd.*

CASTE AND OCCUPATION		Number per 1,000 workers engaged on each occupation	Number of female workers per 1,000 males
1		2	3
GAMIT			
Cultivators and agricultural labourers.	*Hindu*	*769*	*1,117*
	Animist.	*957*	*768*
Field labourers	Hindu	9	....
	Animist.	1	163
Raisers of livestock, milkmen and herdsmen	Hindu	10	....
	Animist.	7	229
Transport	Hindu	19	....
	Animist.	4	9
Labourers unspecified	Hindu	28	2,000
	Animist.	4	563
Others	Hindu	165	121
	Animist.	27	72
NAYAKDA			
Cultivators and agricultural labourers.	*Hindu*	*776*	*758*
	Animist.	*862*	*823*
Field labourers, etc.	Hindu	7	....
	Animist.	27	1,921
Raisers of livestock, milkmen and herdsmen	Hindu	24	750
	Animist.	15	823
Public administration.	Hindu	18	....
	Animist.	11	154
Labourers unspecified.	Hindu	85	....
	Animist.	41	3,073
Others	Hindu	90	19
	Animist.	44	223
Musalman			
FAKIR			
Mendicants		*592*	*325*
Cultivators		178	107
Field labourers, etc.		48	1,730
Labourers unspecified		26	2,600
Others		156	300
GHANCHI			
Oil pressers		*428*	*179*
Cultivators		162	230
Field labourers, etc.		60	837
Trade		108	161
Others		242	495
MALEK			
Cultivators		*507*	*251*
Field labourers, etc.		83	2,493
Public force		42	....
Labourers unspecified		71	711
Others		297	185
MEMON			
Traders and Pedlars		*700*	*390*
Cultivators		143	43
Field labourers, etc.		35	805
Labourers unspecified		30	1,379
Others		92	181
MOLESALAM			
Cultivators		*687*	*169*
Field labourers, etc.		134	1,785
Industries		23	88
Labourers unspecified		31	1,125
Others		125	105
MOMNA			
Cultivators		*707*	*324*
Field labourers, etc.		140	235
Industries		91	431
Labourers unspecified		11	1,545
Others		51	350
PATHAN			
Cultivators		*299*	*207*
Public force		152	....
Public administration		72	....
Labourers unspecified		103	905
Others		383	264
PINJARA			
Cotton carders		*235*	*476*
Cultivators		111	308
Trade		356	334
Labourers unspecified		52	1,542
Others		246	389
SAIYAD			
Priests		*86*	*150*
Cultivators		261	111
Public administration		72	18
Labourers unspecified		97	725
Others		484	198
SHAIKH			
Cultivators		*222*	*80*
Field labourers, etc.		49	1,016
Industries		142	375
Labourers unspecified		147	871
Others		430	92
VOHORA			
Traders, Pedlars and cultivators		*718*	*194*
Field labourers, etc.		75	3,156
Labourers unspecified		42	787
Others		165	407
Parsi			
PARSI			
Traders		*213*	*244*
Cultivators		202	111
Industries		200	571
Arts and Professions		101	122
Others		284	201
Christian			
INDIAN CHRISTIAN			
Cultivators		*356*	*1,008*
Field labourers		1	....
Industries		411	557
Labourers unspecified		84	652
Others		148	222

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SUBSIDIARY TABLE IX.—Distribution of 10,000 Persons by Occupation and Religion

SUB-CLASS	Distribution by Religion of 10,000 persons following each occupation							Distribution by Occupation of 10,000 persons of each religion						
	Hindu	Jain	Animist	Musalman	Parsi	Christian	Others	Hindu	Jain	Animist	Musalman	Parsi	Christian	Others
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Total Population ..	**8,193**	**203**	**767**	**763**	**35**	**35**	**4**	**10,000**	**10,000**	**10,000**	**10,000**	**10,000**	**10,000**	**10,000**
I Exploitation of Animals and Vegetation	8,356	15	1,075	529	13	15	2	6,771	508	9,263	4,600	2,434	2,702	3,368
II Exploitation of Minerals ..	9,790	..	..	195	..	15	..	4	..	..	1	..	1	..
III Industry	8,829	79	71	873	34	113	3	1,286	464	110	1,364	1,141	3,795	1,100
IV Transport	7,412	61	297	1,997	102	120	11	119	40	51	344	380	453	336
V Trade	6,170	2,128	19	1,560	109	9	5	499	6,945	16	1,355	2,035	178	830
VI Public Force	6,637	5	329	2,964	6	42	17	89	3	47	424	17	132	511
VII Public Administration ..	8,206	138	161	1,373	64	37	21	195	133	41	351	350	207	1,137
VIII Professions and Liberal Arts.	8,643	185	40	897	113	104	18	348	299	17	387	1,048	980	1,558
IX Persons living on their income	6,661	3,053	2	661	117	6	..	41	818	..	47	179	9	..
X Domestic Service	7,377	493	142	1,620	208	154	6	38	103	8	90	250	187	64
XI Insufficiently described occupations	7,862	235	577	1,136	129	57	4	567	683	444	879	2,153	958	664
XII Unproductive	7,167	18	48	2,442	9	280	36	43	4	3	158	13	398	472

SUBSIDIARY TABLE X—Number of Persons Employed on Railway, Irrigation and Post Office

Class of persons employed	Europeans and Anglo-Indians	Indians	Remarks
Railways			
Total persons Employed	**19**	**5,298**	The figures for the year 1911 are not available.
Persons directly employed	*19*	*4,542*	
Officers	3	2	
Subordinates drawing more than Rs. 75 p.m.	13	172	
Subordinates drawing from Rs. 20 to 75 p.m.	1	1,159	
Subordinates drawing under Rs. 20 p.m..	2	3,209	
Persons indirectly employed	....	*756*	
Contractors	....	10	
Contractors' regular employes	....	114	
Coolies..	....	632	
Irrigation Department			
Total persons Employed	....	**198**	
Persons directly employed	....	*60*	
Officers	....	....	
Upper Subordinates	....	1	
Lower "	....	....	
Clerks	....	16	
Peons and other servants	....	28	
Coolies..	....	15	
Persons indirectly employed	....	*138*	
Contractors	....	7	
Contractors' regular employes	....	1	
Coolies..	....	130	

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SUBSIDIARY TABLE X.—NUMBER OF PERSONS EMPLOYED ON RAILWAY, IRRIGATION AND POST OFFICE—(*continued*)

CLASS OF PERSONS	POST OFFICE		TELEGRAPH DEPARTMENT		Remarks
	Europeans and Anglo Indians	Indians.	Europeans and Anglo-Indians	Indians	
1	2	3	4	5	6
Total persons employed	**1**	**770**	**4**	..	
(1) *Post and Telegraphs*	*1*	*770*	*4*	..	
Supervising officers (including Probationary Superintendents and Inspectors of Post Offices and Assistant and Deputy Superintendents of Telegraphs and all officers of higher rank than these)	1	6	..	..	
Postmasters, including Deputy, Assistant, Sub and Branch Postmasters	58	..	..	..	
Signalling establishment including warrant officers, non-commissioned officers, military telegraphists and other employés	..	1	2	..	
Miscellaneous agents, School masters, Station masters, etc.	..	197	..	..	
Clerks of all kinds	..	84	2	..	
Postmen	..	341	..	..	
Skilled labour establishment including foremen, instrument-makers, carpenters, blacksmiths, mechanics, sub-inspectors, linemen and lineriders and other employés	..	..	..	..	
Unskilled labour establishment including line coolies, cable guards, batterymen, telegraph messengers, peons and other employés	..	34	..	..	
Road establishment consisting of overseers, runners, clerks and booking agents, boatmen, syces, coachmen, bearers and others	..	49	..	..	

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SUBSIDIARY TABLE XI.—Distribution of Industries and Persons Employed

Industrial Establishment	Total Number of establishments	General distribution of industries and persons employed: Division where chiefly located	Number of persons employed: Total		Direction, Supervision and clerical				Skilled workmen		Unskilled labourers				Number of adult females employed per 1,000 adult males	Number of children of both sexes employed per 1,000 adults
					Europeans and Anglo-Indians		Indians				Adults		Children			
			Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Total ..	**161**	....	**9.172**	**2.951**	**4**	..	**894**	..	**1.097**	**2**	**6.671**	**2.695**	**506**	**254**	**311·2**	**66·0**
IV. Textile and connected Industries	119	State	7,478	2,653	..	..	655	..	930	2	5,427	2,431	457	220	346·53	71·02
Cotton Ginning Factories.	*74*	*State*	*5,551*	*1,694*	..	..	*310*	..	*439*	..	*2,725*	*1,587*	*77*	*107*	*456·82*	*59·5*
Cotton Ginning and Pressing Factories ..	*11*	„	*681*	*316*	..	..	*72*	..	*103*	..	*480*	*296*	*26*	*20*	*451·9*	*48·37*
Cotton Presses	*15*	„	*562*	*243*	..	..	*62*	..	*38*	..	*459*	*240*	*3*	*3*	*429·35*	*7·56*
Cotton Spinning and Weaving Establishments	*11*	*Baroda City and Kadi*	*1,978*	*395*	..	..	*159*	..	*340*	*2*	*1,154*	*303*	*325*	*9*	*184·57*	*211·37*
Dyeing Establishments ..	*7*	*Baroda and Navsari*	*691*	*5*	..	..	*49*	..	*14*	..	*602*	*5*	*26*	..	*7·51*	*·0*
VII. Metal Industries ..	2	Baroda City ..	54	..	..	..	6	..	14	..	34	..	..	..	..	..
VIII. Glass and Earthenware Industries	7	Navsari and Baroda City.	431	178	..	..	36	..	4	..	367	147	24	31	361·17	99·27
IX. Chemical Industries ..	4	„	225	25	..	..	43	..	12	..	163	22	7	3	100·91	41·66
X. Food Industries ..	9	Baroda City, Navsari and Kadi Division	244	82	..	..	37	..	20	..	181	82	6	..	344·53	18·75
XII. Furniture Factories ..	3	Baroda City and Kadi Division	102	..	..	..	13	..	35	..	51	..	3	..	..	30·30
XIII. Industries connected with building	1	Okhamandal Division	169	10	4	..	32	..	38	..	95	10	..	..	59·17	..
XIV. Construction and means of transport and communication	3	Baroda City ..	34	..	..	..	4	..	19	..	11	..	..	..	..	..
XV. Production, Application, and Transmission of physical forces ..	2	„ ..	89	2	..	..	29	..	10	..	50	2	..	..	22·4	..
XVI. Industries of Luxury ..	11	„ ..	346	1	..	..	39	..	6	..	292	1	9	..	2·96	26·62

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SUBSIDIARY TABLE XII.—PARTICULARS OF ESTABLISHMENTS EMPLOYING 20 OR MORE PERSONS IN 1911 AND 1921

Establishments employing 20 or more persons		Industries													Remarks
		All Industries	Textile Industries	Leather, etc. Industries	Wood Industries	Metal Industries	Glass and Earthenware Industries	Chemical Industries	Food Industries	Furniture Industries	Building Industries	Construction of means of transport and communication.	Production, application and transmission of physical forces	Luxury	
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15
A. Total Establishment.	1921 ..	**124**	**98**	..	..	**1**	**7**	**3**	**4**	**3**	**1**	..	**2**	**5**	
	1911 ..	**86**	**65**	**1**	**1**	..	**3**	**4**	**4**	**1**	..	**2**	**1**	**4**	
(i) Directed by Government or local authorities.	1921 ..	4	..	..	..	..	..	..	2	1	..	..	1	..	
	1911* ..	..	..	..	..	..	..	..	..	..	..	..	..	..	* Figures for 1911 are not available.
(ii) Directed by Registered Companies.	1921 ..	27	20	..	..	..	2	1	..	1	1	..	..	2	
	1911* ..	..	..	..	..	..	..	..	..	..	..	..	..	..	
(iii) Owned by private persons		93	78	..	..	1	5	2	2	1	..	..	1	3	
(a) *European or Anglo-Indian.*	*1921* ..	..	..	..	..	..	..	..	..	..	..	..	..	..	
	*1911** ..	..	..	..	..	..	..	..	..	..	..	..	..	..	
(b) *Indian*	*1921* ..	*93*	*78*	..	..	*1*	*5*	*2*	*2*	*1*	..	..	*1*	*3*	
	*1911** ..	..	..	..	..	..	..	..	..	..	..	..	..	..	
(c) *Others*	*1921* ..	..	..	..	..	..	..	..	..	..	..	..	..	..	
	*1911** ..	..	..	..	..	..	..	..	..	..	..	..	..	..	
B. Numbers of Persons Employed.															
(a) Direction, Supervision and Clerical.	1921 ..	836	621	..	..	4	36	42	28	13	36	..	29	27	
	1911 ..	737	504	7	13	..	15	90	26	11	..	13	17	41	
(b) Skilled Workmen..	1921 ..	961	840	..	..	10	4	12	10	35	38	..	10	2	
	1911 ..	1,791	1,196	57	3	..	129	33	43	39	..	69	9	213	
(c) Unskilled Labour..	1921 ..	9,797	8,354	..	..	28	569	185	222	54	105	..	52	228	
	1911 ..	6,893	5,780	8	35	..	370	264	239	12	..	137	32	16	
(i) Adult women per 1,000 adult men.	1921 ..	416·1	455·9	..	..	..	400·5	136·3	500·0	..	105·3	..	40·0	..	
	1911 ..	426·1	459·7	166·7	400·0	..	862·7	146·1	188·5	..	..	68·4	..	..	
(ii) Children of both sexes per 1,000 adults.	1921 ..	83·0	87·8	..	..	..	107·2	57·1	13·7	58·8	..	..	..	27·0	
	1911 ..	221·5	239·8	142·9	..	..	298·2	90·9	52·9	..	..	96·0	..	..	

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SUBSIDIARY TABLE XIII.—Organisation of Establishments

Type of Organisation	Industrial Establishments										
	Total Establishments	Textile Industries	Metal Industries	Glass and Earthenware Industries	Chemical Industries	Food Industries	Furniture Industries	Building Industries	Construction of means of transport and communication.	Production, application and transmission of physical forces	Luxury
1	2	3	4	5	6	7	8	9	10	11	12
Total Baroda State	**161**	**119**	**2**	**7**	**4**	**9**	**3**	**1**	**3**	**2**	**11**
1. Under the Local Government or Local Authority.	5	..	..	..	..	3	1	..	..	1	..
2. Registered Companies	30	22	1	2	1	..	1	1	..	..	2
(a) With Europeans or Anglo-Indian Directors	..	..	..	..	..	..	..	..	..	..	..
(b) With Indian Directors	29	22	1	2	1	..	1	..	..	..	2
(c) With Directors of different races	1	..	..	..	..	..	..	1	..	..	..
3. Privately owned	126	97	1	5	3	6	1	..	3	1	9
(a) By Europeans or Anglo-Indians	..	..	..	..	..	..	..	..	..	..	..
(b) By Indians	126	97	1	5	3	6	1	..	3	1	9
(c) By joint Owners of different races.	..	..	..	..	..	..	..	..	..	..	..

SUBSIDIARY TABLE XIV.—Place of Origin of Skilled Workmen

Birth Place	Industrial Establishments												Remarks.
	Total number of workmen		IV.—Textile and Connected Industries										
			Ginning Factories		Ginning and Pressing Factories		Cotton Pressing Factories		Spinning and Weaving Establishments		Dyeing Establishments		
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. In the State	**555**	**2**	**220**	..	**42**	..	**27**	..	**256**	**2**	**10**	..	There are no skilled workmen working in the State who were born outside India.
(i) Division of Employment ..	542	2	215	..	40	..	27	..	250	2	10	..	
(ii) Other Divisions	13	..	5	..	2	..	..	..	6	..	..	..	
2. Outside the State	**379**	..	**219**	..	**61**	..	**11**	..	**84**	..	**4**	..	
(i) Broach	100	..	82	..	20	..	5	..	22	..	..	..	
(ii) Surat	39	..	34	..	3	..	..	..	2	..	..	..	
(iii) Kaira	24	..	12	..	1	..	..	..	8	..	3	..	
(iv) Ahmedabad	74	..	41	..	19	..	2	..	11	..	1	..	
(v) Panch Mahals	1	..	..	..	..	..	..	..	1	..	..	..	
(vi) Kathiawad	54	..	27	..	17	..	1	..	9	..	..	..	
(vii) Elsewhere	78	..	23	..	1	..	3	..	51	..	..	..	

SUBSIDIARY TABLE XV.—Place of Origin of Unskilled Labour

Birth Place	Total number of labourers		IV.—Textile and Connected Industries									
			Ginning Factories		Ginning and Pressing Factories		Pressing Factories		Spinning and Weaving Establishments		Dyeing Establishments	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
1	2	3	4	5	6	7	8	9	10	11	12	13
1. In the State	**4,018**	**1,512**	**1,736**	**932**	**250**	**130**	**332**	**159**	**1,181**	**286**	**519**	**5**
(i) Division of enumeration	3,711	1,261	1,537	799	195	78	297	99	1,164	280	518	5
(ii) Other divisions	307	251	199	133	55	52	35	60	17	6	1	..
2. Outside the State	**1,858**	**1,139**	**1,065**	**762**	**256**	**186**	**130**	**84**	**298**	**107**	**109**	..
(i) Broach	112	70	89	59	4	5	10	4	9	2	..	..
(ii) Surat ..	297	313	215	247	42	43	33	22	6	1	1	..
(iii) Kaira	548	234	305	162	66	38	37	19	59	15	81	..
(iv) Ahmedabad	118	33	69	12	19	12	6	3	20	6	4	..
(v) Panch Mahals	22	7	19	4	..	..	..	..	2	3	1	..
(vi) Kathiawad	134	100	49	55	32	25	30	18	23	2	..	..
(vii) Elsewhere	627	382	319	223	93	65	14	18	179	78	22	..
3. Outside India	**1**	..	**1**	..	..	..	..	..	..	..	..	..
(i) Arabia	1	..	1	..	..	..	..	..	..	..	..	..

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SUBSIDIARY TABLE XVI.—Proportional Distribution of adult women and of children of each sex in different Industries

Women and Children	Principal Industries of Employment									
	Total number employed	Textile Industries	Glass and Earthenware Industries	Chemical Industries	Food Industries	Furniture Industries	Building Industries	Construction of means of transport and communication	Production, application and transmission of physical forces	Luxury
1	2	3	4	5	6	7	8	9	10	11
Adult Women	1,000	902	55	8	30	..	4	..	1	..
Children	1,000	891	72	13	8	4	..	..	..	12
Male	*666*	*602*	*31*	*9*	*8*	*4*	..	..	..	*12*
Female	*334*	*289*	*41*	*4*	..	..	..	..	..	..

SUBSIDIARY TABLE XVII.—Distribution of power

Type of power used	Industrial Establishment									
	Total Establishment	Textile Industries	Metal Industries	Glass and Earthenware Industries	Chemical Industries	Food Industries	Furniture Industries	Building Industries	Production, application and transmission of physical forces	Luxury
1	2	3	4	5	6	7	8	9	10	11
Steam	102	91	..	2	3	3	..	..	2	1
Oil	31	17	2	2	..	2	3	1	..	4
Water	..	..	..	..	..	..	..	..	..	..
Gas	..	..	..	..	..	..	..	..	..	..
Electricity	2	..	..	..	..	..	..	..	..	2
(*a*) *Generated on Premises* ..	*1*	..	..	..	..	..	..	..	..	*1*
(*b*) *Supplied from without* ..	*1*	..	..	..	..	..	..	..	..	*1*
Total ..	135	108	2	4	3	5	3	1	2	7

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APPENDIX I
CENTRE OF POPULATION
(By Prof. L. S. Vaidyanathan, M.A., A.I.A.)

1. **Limitations of the enquiry.**—Important and interesting inferences as to movement of population can be drawn from an investigation of what is called the "Centre of Population," which is the same as the statistical centre of mass of the population occupying the area in question.

The utility of such an investigation consists in enabling us to find a centre or centres to which the population of a given area tends to gravitate through economic or other causes. But such an investigation can only be truly helpful if the area dealt with is fairly large, and compact in character. Otherwise a decrease in a particular area would give no clue to where the deficiency has migrated; nor an increase conversely in another area would serve to show from where the immigrants have come in. In regard to this State however, such a comprehensive enquiry for the whole area is extremely difficult because its administrative divisions are widely scattered from one another. The only two divisions of the Baroda State that can lay claim to any pretension of being fairly compact are Baroda and Kadi and by way of sampling, the investigation has been made in these two areas taken separately. The positions of the centre of population in these two divisions have been found with the Census returns of 1911 and 1921, so as to give an idea as to how far and in what direction the centre has shifted during the decennium.

2. **The Method employed.**—The method employed for finding the centre of population follows the general lines laid down in the United States Census. For this purpose, a convenient point is chosen as the centre for each *prant*—Baroda City for Baroda Division and Mehsana Town for Kadi Division. The East to West line through this centre represents the X axis and the North to South line the Y axis. The whole area of each division is then cut up into squares, each 144 square miles in area by drawing parallels to the axis of X and Y respectively at uniform distances of 12 miles, till the whole area is accommodated in one square or other. The population in each square is then totalled village by village and the sum is put at the centre. If in any square, there occurs a big town or city, or if it be intersected by a large sheet of water or by foreign territory, the population in that square is supposed to be concentrated, away from the centre of the square, at that point, which would very nearly represent the centre of gravity of the population of that square. Then moments are taken considering all individuals to be of uniform weight for these concentrated populations and the values of X and Y, the co-ordinates of the centre of population, computed by the ordinary method of moments.

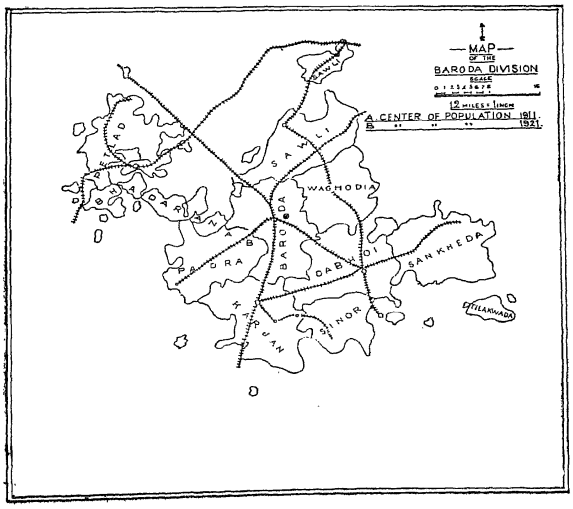
3. **Results: Baroda Division:—**

1911		1921	
$\bar{x}$	— 8·363	$\bar{x}$	— 7·621
$\bar{y}$	— 2·881	$\bar{y}$	— 4·521

showing that the centre in 1911 was at a point which is 8·363 miles due West of Baroda City and then 2·881 miles due South; whereas in 1921 the respective distances are 7·621 and 4·521 in the same directions.

The distance as the crow flies from Baroda was in 1911, 8·8453 miles and in 1921 is 8·8533 miles; so the centre has almost moved on an arc of the circle having Baroda City as centre and radius equal to 8.85 miles nearly. The net distance moved through by the centre being

$$\sqrt{(\cdot 751)^2+(1\cdot 64)^2} = 1\cdot 80 \text{ miles.}$$



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The centre has moved more than double the distance due South than it has done due East.

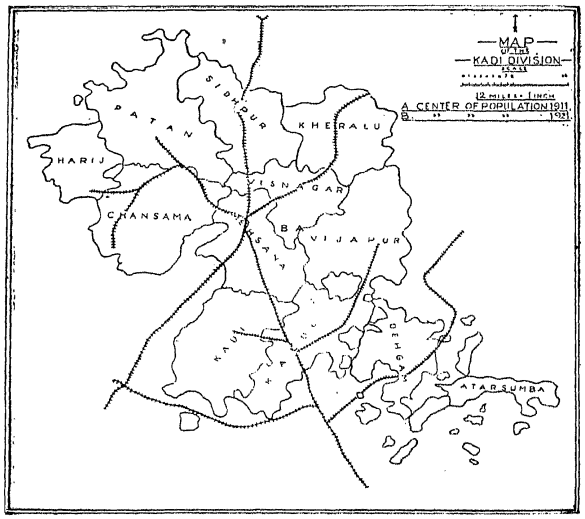
The shifting of the position of the centre can be accounted for by an increase of population in the South Eastern talukas (Waghodia, Dabhoi and Sankheda) and the Southern talukas (Karjan and Sinor e) or by a decrease in the North Western area, or to all these causes co-existing. As a matter of fact, except in Karjan and Sinore, the South Eastern Talukas have shewn large increases, while Petlad and Bhadran have both decreased.

4. Kadi Division :—

1911			1921		
$\bar{x}$	.. ..	= + 7·572	$\bar{x}$	.. .. ..	= + 6·582
$\bar{y}$	.. ..	= — 1·714	$\bar{y}$	.. .. ..	= — 1·629

showing that the centre in 1911 was at that point which is 7·572 miles due East of Mehsana and then 1·714 miles due South, while in 1921 the respective distances are 6·582 and 1·629 in the same directions. The direct distance from Mehsana was in 1911, 7·764 miles and in 1921 is 6·781 miles. The net distance moved through by the centre being—

$$\sqrt{(\cdot 99)^2+(\cdot 085)^2} = \cdot 9936 \text{ miles.}$$



The centre has moved more than 11 times the distance due West than it has done due North. The shifting of the position of the centre can be accounted for by an appreciable increase in the Western talukas (Chanasma and Harij) and a slight increase in the Northern talukas (Pattan, Sidhpur and Kheralu) or by a large decrease in the Eastern Talukas and a slight decrease in the Southern Talukas or to both causes existing simultaneously. As a matter of fact, the census shows a large increase in Eastern and North-Eastern Talukas. Although the population has increased everywhere in this division, the increase has been greater in the West than in the East.

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APPENDIX II

A Method to Test the Accuracy of Birth Registration.

1. The following method is suggested for estimating the number of births in any given year from the corrected census return for the age period 0-1. The method assumes in the first place that there is a constant ratio between the census return at that age and the number of births in the twelve months preceding; and this relation enables us to compute to a high degree of accuracy the number of births in any one normal year and so to estimate the births for the decade: so long as the registration of vital occurrences continues to be defective, some such method is very necessary. The census return in the age period 0—1 if accurate, and if the census year happens to be normal one without any epidemics or famines, should represent the survivors of children born in the preceding twelve months, but the Census return is not always very accurate. There is always a depression in the age curve in regard to 1-2 as compared to 0-1 and 2-3; and this has been explained in the Bengal Census Report of 1901 as being due mainly to the inclusion in the first age period of unweaned infants over 1. But if we compare the age returns for such intelligent communities as Parsis, Jains, Anglo-Indians, etc., this depression is just as much a feature of theirs as in the General Age Table. So it cannot be merely owing to inaccuracy of returns that the depression is due. I presume the specific rate of mortality for age period 1-2 is very high if not so high as at the earlier age and as a result, the children of that age being at risk for a longer period and subjected to almost equal intensity of mortality have suffered at the census date a much larger number of deaths than those at 0-1. Whatever may be the case it is necessary to smooth the age returns for the first three years. The ordinary method of "Bloxaming" does not help us as it leaves the first age period entirely unaffected. For this reason, the Columnar method as used and explained in the Actuarial Report (paras 209-11 of this Report) is recommended. After this adjustment is made for quinary groups, the returns for the individual years should be deduced graphically according to the method described in Newsholme's *Vital Statistics* (p. 266, third edition). The method is explained also by Mr. Hardy in his Age Report for 1901 (p. 5, para 16).

2. Having got our corrected figure for age 0-1 we should now construct a table showing the number of deaths per each 100 births per month from March 19, 1920 to the census date. With a view to do this, it is necessary to assume that infant mortality proceeds more or less on the basis of a law. It is a universal experience that it decreases in force as the infant grows and this decrease is perceptible from month to month and even from week to week. It is the first weeks and the first three months that constitute the most critical period in the infant's life. The more accurate vital experiences of European Statisticians may serve us as a guide. From the general experience of mortuary returns for 1881—90 of England, and also from the infant death figures for three rural counties, five manufacturing counties and three selected towns (*Vide* Newsholme *Vital Statistics* p. 122) it has been observed that the proportion of mortality in the three months after birth varied from 41 per cent. to 49 per cent. of total infant deaths during the year. Notter and Firth (*Vide* their *Practical Hygiene*) observe as their experience that out of a total of 128·1 infants dying within the year no less than 66·6 die within the first three months and a further 24·7 die within the next three months. The Life Table Report of the General Census of England and Wales states that 73 per cent. of infant deaths happen within six months after birth.

Taking these results we may assume for this State and India generally, 60 per cent. to be the proportion of infant deaths occurring within the first quarter, 20 per cent. in the second quarter, 12 per cent. in the third quarter and 8 per cent. in the last quarter of the year. These assumptions are necessary because at the census date, the infant population would be existing at varying "risks" the largest amount of average risk being $11\frac{1}{2}$ months for those born between March 19 and April 18 of 1920, and the smallest average risk being $\frac{1}{2}$ month for those born in February—March 1921. Between these two batches of births, the mortality varies in intensity inversely to the lapse of months. Children born in March—April 1920 and living on the census day will have escaped the full intensity of infant mortality of the first six months and survived into the healthier portions of their first year life. Children born in the later months will be progressively subjected to higher rates of mortality, as they will come under observation more and more during the risky months of their first year lives, than those born earlier. Therefore starting with the normal rate of mortality we have progressively to weight it according as the intensity grows stronger. The normal rate of mortality we assume to be 30 per cent. of those living at age 0 (i.e. of births). This is based on Mr. Ackland's Life Table for Bombay for the decade 1901-11, and may be taken to be the normal rate of mortality for infants living at age 0 for the present.

3. The question now remains how this normal rate is to be weighted month by month. The March-April born are subject to $11\frac{1}{2}$ months' risk on an average, therefore they yield $30 \times \frac{11 \cdot 5}{12}$ or 28·75 deaths per 100 births.

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The June-July born will have $8\frac{1}{2}$ months' risk and should have according to our assumption 92 per cent. of 28·75 or 26·45 deaths. Those born in September-October 1920 will be subject to $5\frac{1}{2}$ months' risk and should yield therefore according to our assumption 80 per cent. of 28·75 or 23·00 deaths. Those born in December-January will have $2\frac{1}{2}$ months' risk and should therefore suffer 60 per cent. of 28·75 or 17·25 deaths. Of these 17·25 deaths, the first month after birth should absorb the largest number, as it is in that period that the infant is liable to the greatest risk.

4. From these data we have now to work up the rates for the intervening months; for this purpose we should take as our guide the Hamburg City Vitality experience for 1911 and 1912 (quoted in Whipple *Vital Statistics* p. 342) perhaps the completest record of births and infant deaths. We find the specific mortality rate for infants for that city from that table to be 15 per cent. for each of those years. As we have taken 30 per cent. to be our rate, the Hamburg Record may well be taken as our basis. From that table, the monthly records of deaths among births may be averaged, so also the monthly record of births ; and from the proportion between them our deaths may be distributed month by month and the monthly mortality rates deduced thereupon. Thus we get the following Tables (corrected to three decimals).

TABLE I

Year Number	Births	Died before Census Day	Survived on Census Day
March—April 1920	100	$\frac{30}{12} \times 11·5$ or 28·75	100—28·75 = 71·250
April—May „	100	$\frac{32·31}{12} \times 10·5$ or 28·268	100—28·268 = 71·732
May—June „	100	$\frac{34·63}{12} \times 9·5$ or 27·413	100—27·413 = 72·587
June—July „	100	$\frac{37·34}{12} \times 8·5$ or 26·450	100—26·450 = 73·550
July—August „	100	$\frac{40·79}{12} \times 7·5$ or 25·492	100—25·492 = 74·508
August—September „	100	$\frac{45·02}{12} \times 6·5$ or 24·388	100—24·388 = 75·612
September—October „	100	$\frac{50·18}{12} \times 5·5$ or 23·000	100—23·000 = 77·000
October—November „	100	$\frac{57·6}{12} \times 4·5$ or 21·600	100—21·600 = 78·400
November—December „ ..	100	$\frac{67·28}{12} \times 3·5$ or 19·623	100—19·623 = 80·377
December 1920—January 1921 ..	100	$\frac{82·8}{12} \times 2·5$ or 17·250	100—17·250 = 82·750
January—February „ ..	100	$\frac{111·47}{12} \times 1·5$ or 13·934	100—13·934 = 86·066
February—March „ ..	100	$\frac{218·71}{12} \times ·5$ or 9·113	100— 9·113 = 90·887
Sum	**1200**	**255·281**	**944·719**

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TABLE II

Year and month	Births	Died from March 19, 1920 to March 18, 1921, before reaching the age of one year.												
		March April.	April May.	May June.	June July.	July Aug.	Aug. Sept.	Sept. Oct.	Oct. Nov.	Nov. Dec.	Dec. Jan.	Jan. Feb.	Feb. March.	
March 19, to April 18 ..	100	9·113	4·821	3·316	2·373	1·977	1·400	1·388	1·104	·958	·963	·855	·482	28·750
April—May ..	100	..	9·113	4·821	3·316	2·373	1·977	1·400	1·388	1·104	·958	·963	·855	28·268
May—June ..	100	..	..	9·113	4·821	3·316	2·373	1·977	1·400	1·388	1·104	·958	·963	27·413
June—July ..	100	..	..	..	9·113	4·821	3·316	2·373	1·977	1·400	1·388	1·104	·958	26·450
July—Aug. ..	100	..	..	..	..	9·113	4·821	3·316	2·373	1·977	1·400	1·388	1·104	25·492
Aug.—Sept. ..	100	..	..	..	..	..	9·113	4·821	3·316	2·373	1·977	1·400	1·388	24·388
Sept.—Oct. ..	100	..	..	..	..	..	..	9·113	4·821	3·316	2·373	1·977	1·400	23·000
Oct.—Nov. ..	100	..	..	..	..	..	..	..	9·113	4·821	3·316	2·373	1·977	21·600
Nov.—Dec. ..	100	..	..	..	..	..	..	..	..	9·113	4·821	3·316	2.373	19.623
Dec.—Jan. ..	100	..	..	..	..	..	..	..	..	..	9·113	4·821	3·316	17·250
Jan.—Feb. ..	100	..	..	..	..	..	..	..	..	..	..	9·113	4·821	13·934
Feb.—March ..	100	..	..	..	..	..	..		..	..	..	..	9·113	9·113
Sum ..	**1,200**	**9·113**	**13·934**	**17·250**	**19·623**	**21·600**	**23·000**	**24·388**	**25·492**	**26·450**	**27·413**	**28·268**	**28·750**	**944·719**

5. Thus an enumeration of 944,719 infants on the census day accounts for 1,200,000 births that have taken place within twelve months before that date. Or in other words $\frac{944 \cdot 719}{1,200}$ or 78·727 per cent. of the children born in the course of just one year preceding the Census are enumerated on the census date, and this ratio worked out on the mid-decade population of 0—1 (calculated on the principle of geometric variation from the corrected data of two censuses) will give the average annual number of births or the total of the decade.

This ratio for a normal year gives further results. Calculated on the mean total of child-bearing females aged 15-45 it is found that 22,093 children are born to every 10,000 such females in a decade. This proportion is useful to work with as the return of child-bearing females is correcter than that of infants aged 0-1. If we take the reproductive limits to be 15-40, the number of normal births per 10,000 such females works out at 24,707. This normal rate may be fairly assumed to be constant, as the rate of fertility from decade to decade does not vary largely in India.

In Prof. Vaidyanathan's Life Table, the children alive between ages 0 and 1 are shown: 76,795 males and 78,832 females, per 100,000 births of each sex.

Thus the above ratio of 78,727 children alive for 100,000 births, worked out on the basis of these assumptions may be accepted as generally holding good. That the assumptions themselves are broadly true is also shewn thereby.

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APPENDIX III

A NOTE ON

SHREYAS SADHAKA ADHIKARIVARGA

BY NARMADASHANKAR D. MEHTA, B.A., LL.B.
(*Chief Officer, Ahmedabad Municipality*)

1. **Introductory**—When the Pauranic Hinduism degenerated itself into idle idolatry and the Western India even under University education could get no inspiration either from the orthodox Sâivism of Smarta or Pâshupata school or from the Sâkta cult of the Tantric school or from the Vaishnavism of Ramanuja or Vallabhacharya or Swâminarayan or from the religious reform movements of Arya Samaj or Prarthana Samaj, the province of Gujarat produced both a saint and a genius in the person of Shriman Nrisinhacharya, who brought about a wonderful revival of Vedic religion in its three forms of ritual, worship and knowledge.

2. **Story of Founder's life**—He was born in Kadod, a village in the Bardoli Talukà of the Surat district on 29th November 1853 (Kartik Vad 14th, Samvat 1910). He was a Vishanagra Nagar by caste. His early education was in the Surat District. As a pupil in the primary and secondary schools, he was mystic in temperament and he paid very little attention to the modern method of education, but pleased himself to take walks on the Tapti river and became engrossed in his thinking though always securing a high rank at the annual examinations of the schools. He developed a wonderful intuitive perception and established a small school. Later on with moderate educational equipment, he joined the service in the P. W. D. in the Baroda Cantonment. His superiors were struck by the independence and integrity of his character. During the period of his active service as well as during his Semi-Sanyasi peregrinations after the death of his young wife, he moved about with eyes and ears open among bands of Sadhus of various denominations. For a few days about this time he came in touch with Mohan Swami dwelling in his *Math* at Surat, quite a man of common type having very little claim over intellectual or mystic attainments. Soon after this he began to disclose his innate spirituality by leaps and bounds. He left off his service and devoted all his time in contemplation of the Divine. He began to reveal a special spiritual insight whereby he was able to attract a large number of pupils and devotees, followers and admirers from various walks of life. He was able to probe deep into the hearts of all—from cultivators, mechanics, merchants to teachers, lawyers, professors and administrators—by his spiritual influence which he exercised more by exemplary life as an ideal householder than by mere lectures and sermons. In him all his pupils found not only a unique religious teacher but a loving parent, an intimate friend and an infallible guide in all matters earthly, divine and spiritual. In the year 1882 (Samvat 1938) his disciples formed themselves into a society called Shreyas Sadhak Adhikarivarga under the spiritual guidance of their Guru in Baroda. This Society has never been a sect. It was from the very beginning a school or an academy of able persons studying at the feet of Shriman Nrisinhacharya. The founder of the Society passed off quietly on 3rd August 1897 (Shrâvan Sud 5th Samvat 1953) leaving the mantle of his responsibility on his then minor son Shrimad Upendra Bhagwan who was trained up by Mr. Chhotalal, the premier disciple of the late Guru. The Society at present contains not less than two thousand members. No periodical fee is levied and the management of the *Ashrama* is carried on from the gifts and private earnings of the Guru.

3. **Activities of the Shreyas Sadhak Adhikarivarga**—The Society formed under the spiritual guidance of Sri Nrisinhacharya laid down the objects of their activities to be spiritual bliss (*Shreyas*) in preference to material or mundane pleasure (*Preyas*). But the revelation of spiritual bliss was to be achieved not by absolutely discarding the mundane activities and leading a life of asceticism but by leading a pious life of a house-holder who should turn the material means of pleasure into means of moral and spiritual uplift. The mundane pleasures have no value of their own unless they lead to ethical, æsthetic and spiritual evolution of man. The *Preyas* or mundane pleasure should, therefore, be subordinated to *Shreyas* or spiritual bliss.

4. The fundamental doctrine of the Guru of the Society was that although spiritual bliss is open to all irrespective of the birth of the individual and accidental circumstances, it requires *special* mental and moral qualifications as a working basis. These qualifications varied with individuals according to the plane of their evolution and the initiation

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of the Guru was based upon the innate aptitude of the individual disciple. His teaching was therefore both *general* and individual or *special*. The general teaching was on the common platform of Vedic religion while the individual or special teaching was in the form of special worship, etc., for every individual. The first kind of teaching was open to all and was imparted through works of poetry, dramas, novels, etc.; while the latter in its highest stage was imparted to the select few who were initiated in the mysteries of religion and philosophy. The open teaching of the Guru is embodied in the voluminous literature of the Society noted in the margin. The series of Bhäminibhusana has been very popular and it has passed through seven editions.

1. Vänivilās in three Vols. (Poems.)
2. Bhämini Bhusana in five Vols. (Stories.)
3. Sidhänt Sindhu in two Vols. (Doctrinal book.)
4. Panchavarad Vritänta (Spiritual Novel full of esoteric teachings.)
5. Tribhuvan Vijayikhadga. (Novel full of spiritual and secular ideals.)
6. Sureshcharitra (Spiritual Drama).
7. Sati Suvarnä (Novel.)
8. The Mahäkäl in nine Vols. (Moral, religious & Philosophic essays.)
9. Sanmitranu Mitra Prati Patra. } Letters, etc.
10. Sadbodh Parijätakä. } Letters, etc.

5. **Occult Teaching**—The occult teaching imparted to select few was in four forms of Yoga: (1) Hatha Yoga, (2) Laya Yoga, (3) Mantra Yoga and (4) Raja Yoga. The disciples of each school were given practical lessons in chambers and their progress was watched at periodical visits and when they were found well-grounded in one practice, a higher platform for exercise was given. Oft-times one class of disciples co-ordinated their experiences and then after they got the approval of the Guru they reduced them to writing and circulated among the occult members of the same group. There were senior typical disciples of each class who were ideals for the juniors. It can be stated without contradiction that Shreyas Sadhak Adhikarivarga contained adepts in all the four forms of Yoga and the late Reverend Chhotalal Jivanlal —who was commonly called Mastersaheb being an ideal teacher in the Baroda High School and was the premier disciple of the Guru, had the keys of all the fourfold Yoga in his hands and was the referee of all the juniors in matters of occult practice. His chief works in Gujarati are :—

1. Yogini Kumāri.
2. Dhanavan thavāni amōgh kalā.
3. Adhyātma bal poshak granth mālā—prathama aksha.
4. Vidyarthino sācho mitra.
5. Mangal prenita sandesa.
6. Sudhā srotaswini (in two parts).
7. Bālakone kevi rite kelavavā.
8. Brahma charya.
9. Rog tālvāna upāyo.
10. Is'war Bhakti manushyöye s'a māte karvi.
11. Sreyas sadhak adhikari varga e sun chhe ?
12. Murti pujānan rahasya.
13. Vijnanni rasik vāto.
14. Plaguethi bachvāno upāya.
15. Dugdhöpchàra.

He was the Editor and Chief Contributor of the Mahâkala for 15 years. During his period of literary and religious activities the Mahakala rose to and occupied a pre-eminent position among Gujarati periodicals. He organised the institution of Sadhan Samarambha a weekly session of the Society commencing from Holi Holidays—for the purpose of establishing a habit of concentration of mind with religious devotion in a secluded spot.

6. **Special features of the Society**—Occult teaching requires two fundamental principles: (1) The initiation by an adept or Guru. (2) Faith and devotion in the teaching and practice. With these pre-requisites, the moral and spiritual evolution is as certain as day follows night. The doctrines of the Guru are non-sectarian in character, *i. e.*, they do not require that the disciple should believe in a particular form of God or worship. The theistic view of the Guru is more allied to Saguna Brahma Vāda of Sankar's School of Vedanta and tolerates all forms of worship but the object to be achieved is spiritual realisation of identity of the ego with the Supreme Being which involves the cultivation of the thinking powers over and above that of devotion and action. The Guru required devotion and action on the part of his disciple but as subsequent to thought. Leading followers of the Guru are, therefore, not blind worshippers of idols or symbols of the ordinary Shaiva or Vaishnava cult, nor are they mere speculators of the modern Vedantic type but are practical religious men with the spiritual insight of a Yogi or adept, religious fervour of a saint, and dignified peace of a philosopher.

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7. **Later Activities**—Since the death of the late Mr. Chhotalal Jivanlal, who carried on the responsibility of educating the eldest son of the Guru, the activities of the Society have suffered materially in consequence of want of full time devotees at the Central Ashrama in Baroda. But the Society has developed a special feature of usefulness in Gujarat in as much as the members thereof meet at least four times in a year to perpetuate the memory of their Guru and senior disciple, Mr. Chhotalalbhai, by practical sermons. Shrimad Upendra Bhagwan who occupies the responsible status of Guru has shown conspicuous ability in religious organisation and has led in the cultivation of æsthetics as hand-maid in religious and philosophic education. His poems reveal the working of a high spiritual mind and the rhythm and imagery of some of his lyrics are unsurpassingly admirable. The following books contribute to the literature of the Society under the guidance of Shrimad Upendra Bhagwan :—

1. Upendra Girâmrita (Poems).
3. Divya Murti (Novel).
2. Sudâmâ Charita (Poem.)

Apart from the æsthetic development of the Society the present Guru takes special interest in social reform movement. Through the instrumentality of his cultured wife he has trained up a large number of women and children in fine arts; and a casual visitor to the periodical sessions of the Society will carry with him very happy reminiscences of what art can achieve in the domain of religion.

8. **Conclusion**—The institution of the Shreyas Sadhak Adhikarivarga though religious, is not trammelled by rigid rules of succession as in the case of Acharyas of the Shaiva or the Vaishnava cult. Nor is there any compulsory monetary obligation on the part of disciples or followers. Each disciple, follower or member is at liberty to apply for initiation at the hands of the Guru and his subsequent relations with the head of the institution are dependent upon the moral aspect rather than on the ritualistic aspect. The success of the institution uptonow is more due to the self-sacrificing spirit of the Guru than to anything else.

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APPENDIX IV

CENSUS OF LIVESTOCK*

(Some Inferences)

Statistical Data

Subject	STATE TABLE
Census of Live Stock by Talukas	XXVI
Variation in Live Stock by Divisions and Censuses	XXVII

1. **Introductory.**—This is the first time that a regular cattle census was undertaken in the State. Several causes such as the succession of bad years, scarcity of milk and *ghee* and the consequent effect on people, the rumours about the exportation of cattle and the growth of creameries had produced a great and anxious stir amongst the public in regard to them. Many people honestly desired that it was time the Government should interfere. Under the circumstances it was far from easy to come to any definite conclusion as to the actual state of things without undertaking a regular census of livestock. It is true that an estimate of livestock is prepared every year by the Agricultural Department through the agency of the Revenue Department but the figures are found to be not very complete and satisfactory. In order, therefore, to lay hold of the true situation and to satisfy the public, the Government of His Highness ordered at my instance a regular census of livestock and agricultural implements along with the general one. The necessary forms were then got printed and attached to the house list; and in October 1920, the first regular cattle census was undertaken along with the work of house-numbering which was then going on. Along with each numbered household, the name of its Head, the number of its cattle, its ploughs and carts were also recorded. It was the completest and the most comprehensive Cattle Census the State has ever undertaken and the results are assuredly satisfactory.

2. **Reference to Statistics.**—The figures of cattle—milch and agricultural—as well as those of ploughs and carts are contained in State Table XXVI. These are further compared with those of the revenue estimates of July 1920, 1919, 1918, 1917 in State Table XXVII. The result recorded in this census when compared with the figures of the July estimate undertaken by the Agricultural Department testifies to the accuracy and completeness of the census enumeration. In regard to certain items of the record such as bullocks and calves, no proper comparison is possible with the revenue figures of July 1920, as they were not separately recorded; the departmental census only counted under "cows," "bulls," "bullocks" and "buffaloes" such of the young of these animals as were available for agriculture, leaving the rest unenumerated. But wherever a proper comparison is possible there is observable an increase in numbers. Thus the numbers of sheep and goats increased from 301,278 to 379,324; the number of ploughs increased from 137,715 to 199,640; and of carts from 76,669 to 86,541. These increases within three months could not have been actual and their only cause is improved and more accurate enumeration. From the above reasons it is to be regretted that no conclusions can be formed as to whether the export of cattle has been going on to any large extent. The total number of cows is shown to be 194,541 in October 1920. In the July record of the same year, the number under cows is shewn to be 248,374; but this number must include a large proportion of the young calves which were separately enumerated in October or else the earlier estimate is entirely erroneous. It could not be that within three months such a large decrease of over 50,000 cows should happen.

3. **Distribution of cattle per inhabited house.**—The number of inhabited houses in the State is 512,845; so that for every 100 houses or families, there were in October 1920, 35 cows, 83 bulls and bullocks, 65 buffaloes and 73 sheep and goats, 39 ploughs and 17 carts.

4. **Famine's toll of cattle.**—Cattle are censused at the end of every five years in the Bombay Presidency. In this State, the record is annual but as above pointed out, is defective. Assuming however that the margin of error is about equal in each year, we append in the margin comparative figures for the last five yearly estimates. Figures for 1910 are given to show that there has been a progressive increase up to 1918. The famine of that year accounted for the decrease of 4 per cent. in 1919. Next year there was a slight increase indicating a tendency towards the normal. The increase in the latest census is of course as pointed out above, due to completer enumeration.

Year	Number of cattle milch and agricultural	Variation per cent
July 1910 ..	844,227	....
„ 1917 ..	969,736	+14·9
„ 1918 ..	1,001,844	+ 3·3
„ 1919 ..	961,674	— 4·0
„ 1920 ..	973,550	+ 1·2
Oct. 1920 ..	*1,345,692*	*+38·2*

* This Appendix has been prepared by my Head Clerk, Mr. J. T. Patel, B.A., mainly from the materials contained in a Gujarati article on the results of the Cattle Census written by Dr. C. V. Sane, M.D., Director of Agriculture, Baroda State, and published in the *Khedut Panchang*.

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5. **Necessity of a complete quinquennial census of Livestock.**—Public estimates of the volume of agricultural wealth are notoriously wide of the mark. To enable them to form proper inference, a census of livestock is the best means. Such censuses should be held twice in every decade, each at the end of a five years' period. Thus will be brought home to them the real state of things which will stop them from indulging in wild conjectures. It is hoped the Government will give its assent to such quinquennial censuses of livestock.

6. **Agricultural cattle.**—Non-agricultural cattle too have been censused this year; in the general review given above we have indicated the proportional figures regarding them. We shall now confine ourselves more particularly to a discussion of agricultural and milch cattle. As it is not possible to give statistics of cattle per Mahal, only useful classes of cattle will be referred to here. Agricultural cattle as ascertained at the present census are shewn per division in the following table :—

Kind	Central Gujarat	South Gujarat	North Gujarat	Kathiawad	Total
Cows	27,454	53,976	83,163	29,948	194,541
Bullocks	111,250	78,846	177,423	37,101	404,620
Bulls	1,207	4,016	11,246	5,169	21,638
Calves	34,641	57,588	49,749	20,781	162,759
Female Buffaloes	79,238	30,113	190,800	17,402	317,553
Male Buffaloes	4,184	2,982	8,683	826	16,675
Young stock	68,153	20,498	128,675	10,580	227,906
Total..	326,129	248,019	649,739	121,807	1,345,692

The total number of agricultural cattle is thus 1,345,692. These if divided into classes like agricultural, milk-giving and young stock will be by divisions as shown in the margin. This analysis shows us that 33 per cent. of the total number of cattle belong to the agricultural class; 38 per cent. belong to the milk-giving class and the remaining 29 per cent. cover the young stock. Looking from an another point of view, we find on the whole, that the milch cattle exceed in number the agricultural ones; but in the Central and to some extent in Southern divisions agricultural cattle outnumber the milch ones while the reverse is the case in regard to North Gujarat and to some extent Kathiawad. The conclusion is that the Central division requires more cattle for purposes of cultivation or that it cannot maintain more milch cattle. The statistics of young stock also clearly point out that the Central and to some extent Southern divisions have proportionately a greater number of the young stock than the other two divisions. This increase may possibly be ascribed to the custom of breeding bullocks out of calves prevalent in these two divisions. This kind of animals being largely exported from North Gujarat there is a proportionately great variation in the number of its young stock. The same difference although to a smaller extent is observable in Kathiawad. The marginal table dealing with the figures of cows and calves indicates that part of the deficiency of young stock in North Gujarat and Kathiawad divisions is due to their exportation to the first two.

Division	Agricultural	Milk-giving	Young stock
Central Gujarat ..	116,641	106,692	102,794
South Gujarat ..	85,844	84,089	78,096
North Gujarat ..	197,352	273,963	178,424
Kathiawad	43,096	47,350	31,361
Total..	442,933	512,094	390,665

Division	Cows	Calves	Increase	Decrease
Central Gujarat ..	27,454	34,641	7,187	....
South Gujarat ..	53,976	57,588	3,612	....
North Gujarat ..	83,163	49,749	....	33,414
Kathiawad	29,943	20,781	....	9,167

7. **Decrease in the number of agricultural cattle.**—It is commonly believed that agricultural cattle have been decreasing in number day by day. How far do statistics support the belief? On what does the scarcity of bullocks depend? Neither the cultivated land alone nor the number of cattle alone can lead us to any conclusion. Both these factors should be considered together before we arrive at any comparison. For purposes of such a comparison, the following table giving the area of cultivated land and the number of agricultural cattle recorded at the past three quinquennial censuses will be useful.

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Natural Division	Agricultural Cattle and Cultivated land (in Bighas)	Census of the Year			
		1906	1911	1916	1921
Central Gujarat ..	Cultivated land	1,204,995	1,210,617	1,384,292	1,420,916
	Agricultural Cattle	83,899	88,657	100,938	116,641
South Gujarat ..	Cultivated land	672,809	668,069	714,871	774,716
	Agricultural Cattle	64,626	69,392	75,852	85,844
North Gujarat ..	Cultivated land	1,808,070	1,568,639	1,258,462	2,269,137
	Agricultural Cattle	139,634	143,758	153,096	197,352
Kathiawad	Cultivated land	727,424	562,637	649,872	690,507
	Agricultural Cattle	27,544	32,994	37,596	43,096
Total ..	Cultivated Area	4,413,298	4,009,953	4,007,497	5,155,276
	Agricultural Cattle	315,431	334,801	367,482	442,933

It is apparent from the above table that there has been a continuously steady increase both in the area cultivated and the number of agricultural cattle. Any inference based on these statistics alone will not help to explain this variation. But if we find out the proportion of average land cultivated in those years, per every pair of bullocks, the *bona fide* situation in respect of these agricultural cattle will be understood. The marginal table shows that Kathiawad has the largest area cultivated per every pair of agricultural cattle while the pair in South Gujarat has the least to till. On the whole since 1916 the present condition of all other divisions except North Gujarat appears to be satisfactory. The higher average of cultivated area in the North Gujarat in this census is accounted for by the fact that there has been a considerable increase in the cultivated area, unaccompanied by, of course, a corresponding increase in the number of its cattle. This means that North Gujarat requires more agricultural cattle (besides bullocks, the agricultural cattle include bulls and he-buffaloes also for comparison with figures of past censuses). Taking only the bullocks as recorded in the present census into consideration, the average land cultivated per Mahal per pair is as given below :—

Year.	Central Gujarat	South Gujarat	North Gujarat	Kathiawad	Baroda State
1906.. ..	28·7	20·8	25·9	52·8	27·9
1911.. ..	27·3	19·2	21·8	34·1	23·9
1916. ..	27·4	18·8	16·4	34·5	21·8
1921.. ..	24·3	18·0	23·0	31·6	23·2

Name of Mahal	Area cultivated per pair of bullocks	Name of Mahal	Area cultivated per pair of bullocks
CENTRAL GUJARAT		NORTH GUJARAT	
Tilakwada	18·2	Vijapur	13·2
Baroda	20·5	Atarsumba	16·8
Savli	21·2	Kheralu	20·8
Sankheda	23·1	Visnagar	22·1
Padra	23·6	Mehsana	22·2
Dabhoi	23·9	Kadi	22·8
Bhadran	25·7	Patan	23·7
Petlad	26·0	Sidhpur	24·5
Vaghodia	26·3	Kalol	25·1
Sinor	31·8	Chanasma	27·0
Karjan	31·9	Harij	28·6
		Dehegams	27·4
SOUTH GUJARAT		KATHIAWAD	
Gandevi	6·8	Beyt	16·8
Vyara	14·7	Kodinar	17·3
Mahuva	15·0	Ratanpur	31·7
Songhad	18·1	Okhamandal	32·2
Navsari	18·5	Dhari	35·1
Mangrol	21·2	Khambha	38·6
Palsana	24·4	Bhimkatta	38·9
Kamrej	26·5	Amreli	43·2
		Damnagar	45·4

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The above table clearly demonstrates where there is a heavy burden of cultivation on a pair of bullocks. Although it is true that more land could be cultivated by good cattle in cotton and non-irriguous cultivation, a bird's eye-view of the above statistics will convince us that Karjan, Kamrej Sidhpur, Chanasma, Amreli and Damnagar Mahals of the State stand in greater need of a better supply of bullocks.

8. Adequacy or otherwise of Agricultural cattle considered.—The Statistical Atlas gives the total number of *Khatedars* (registered landholders) in the year 1916-17 in the Baroda State. From this we can find out the average number of agricultural cattle per *khata*. Now if there has been a change since then in the number of registered cultivators, it ought to tend towards an increase in their number; and hence the average deduced from the last census figures ought to be higher than the present figure of *khatas*. If, therefore, from the above calculation we find that agricultural cattle are not to be found in sufficient stock, it goes without proof that the present situation is worse than the past one. The marginal table shows that there is a little more than one bullock per *khata* in the Central division. When the average is so low, it can be safely surmised that many of the cultivators must go without enough cattle for cultivation. That this is the situation in regard to the supply of cattle is further supported by the fact that the land is more fragmented in Central Gujarat than in any other division. In Kathiawad though the land cultivated by a pair of bullocks is, as appears from para. 7, the largest in extent, the Khatedars there have a greater proportion of bullocks than other divisions. It can further be inferred that in this division the custom of engaging cattle labour for tilling must be less prevalent than in North and Central Gujarat. It is no easy matter to get benefit out of cultivation by engaging labour for tilling, etc. That cultivation in Central division is expensive can also be inferred from the above statistics and the experience amply bears out the inference.

Division	Khatedars (registered landholders)	Bullocks	Average number of bullocks per *khata*
Central Gujarat ..	107,638	111,250	1·0
South Gujarat ..	52,652	78,846	1·5
North Gujarat ..	141,145	177,423	1·2
Kathiawad	17,214	37,101	2·1
Total..	318,649	404,620	1·2

9. Agricultural Implements (ploughs.)—The marginal table shows that Central Gujarat has a sufficient supply of agricultural implements (ploughs) but not of bullocks. South Gujarat and Kathiawad have less ploughs than are essential while North Gujarat has just the amount required of ploughs and bullocks. Another reason why there is a less supply of ploughs in these black-soil divisions is possibly the custom prevalent in these parts to till land by *karab* (Harrow) rather than a plough. This alleviates anxiety for these divisions. Central Gujarat has not a sufficient supply of bullocks and having regard to other conclusions the situation seems to be natural.

Division	Bullocks	Number of ploughs	Average number of bullocks per plough	Ploughs necessary in proportion to number of bullocks
Central Gujarat ..	111,250	59,242	1·8	55,625
South Gujarat ..	78,846	35,558	2·2	39,423
North Gujarat ..	117,423	87,457	2·0	88,711
Kathiawad	37,101	15,887	2·3	18,550

10. Milch Cattle.—There has been a progressive increase in the total number of milch cattle as in the number of agricultural cattle. Compared to the 1916 figures cows show a great decrease. To what this is due cannot be exactly stated, but 1916 figures are not more reliable than the present ones as the enumeration at the time of the last quinquennial census was not so exact as at the present one. The figures of cows supplied by the Revenue Department are 248,374 which compared with 1916, shows an increase by 2,464. The present stock of cows appears to be less because as already pointed out some of the small calves which had been counted along with cows in the Revenue Census were reckoned separately in the present census. The marginal table shows the number of cows and buffaloes by divisions. These statistics show that people in the Central division are less inclined towards breeding of cows while those in Kathiawad and South Gujarat divisions have more than one cow per *khata*. In Kathiawad, the number of cows exceeds the number of buffaloes while North Gujarat has the largest

Year	Cows	Buffaloes
1906	163,665	227,822
1911	230,671	278,745
1916	245,910	317,189
1921	194,541	317,553

Division	Cows	Buffaloes	Total
Central Gujarat ..	27,454	79,238	106,692
South Gujarat ..	53,976	30,113	84,089
North Gujarat ..	83,163	190,800	271,963
Kathiawad	29,948	17,402	47,350
Total..	194,541	317,553	510,094

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number of buffaloes. The table given below shows the number of *Khatedars* who have only one cow and one buffalo between them.

Division	Number of *Khatedars* who have one cow between them	Number of *Khatedars* who have between them only one buffalo
Central Gujarat	3·9	1·3
South Gujarat	0·9	1·7
North Gujarat	1·7	0·7
Kathiawad	0·5	0·9
Total ..	1·6	1·0

11. Cattle-breeding—(*a*) *Cows.*—Turning to the question of cattle-breeding we find that the Central and the South Gujarat divisions have not got a sufficient supply of bulls. The abnormally low proportion of cows per bull in Kathiawad and North Gujarat requires some consideration The proportion of 7 cows in Northern division and 5 cows in Kathiawad per bull seems to be rather doubtful. This total of bulls, therefore, must possibly be including those bulls which are used for purposes of cultivation. Such a large number of bulls can hardly be expected to be of noble breed and hence a degeneration is apprehended in the succeeding generations of live-stock of these divisions.

Division	Bulls	Cows	Number of cows per one bull
Central Gujarat ..	1,207	27,454	22
South Gujarat ..	4,016	53,976	13
North Gujarat ..	11,246	83,163	7
Kathiawad	5,169	29,948	5

(*b*) *Buffaloes.*—Proportionately North Gujarat and Kathiawad have not a sufficient number of he-buffaloes. In South Gujarat the proportion in regard to cows and buffaloes is equal. Central Gujarat has a larger stock of he-buffaloes but proportionately stands below Southern division in its number. From a reference to both of the above tables, it appears that Central Gujarat, North Gujarat and Kathiawad divisions require quite a good number of bulls and that too of a noble breed; only North Gujarat and Kathiawad stand in need of more he-buffaloes.

Division	He-Buffaloes	Buffaloes	Number of buffaloes per he-buffalo
Central Gujarat ..	4,184	79,234	19
South Gujarat ..	2,982	30,113	13
North Gujarat ..	8,683	190,800	22
Kathiawad	823	17,402	21

12. Population and Milch Cattle.—The question of milch cattle leads us to the cognate problem of adequate supply of milk and clarified butter to the population of the State. It is very difficult to come to any definite conclusion. The use of the milk and butter of cows of North Gujarat seems to be far less compared to that of buffaloes. The condition of the Central division seems to be almost similar. South Gujarat appears however better off than Central Gujarat in this regard. Kathiawad has more cows than buffaloes, and cows and buffaloes are equally milk-giving there. Let us now ascertain the proportion of persons to each head of milch cattle (cows and buffaloes). A cow is not so milk-giving as a buffalo; of the two the latter is the more important. If, therefore, we wish to find out a truer proportion of milch cattle, the number of cows, which can stand comparison with buffaloes must be taken as very small. In regard to Kathiawad cows, however, they may be rightly considered on a par with buffaloes of that division. The cows of North Gujarat are, on the other hand, useless for milk purposes and can be safely ignored. In the remaining two divisions from the point of view of milk-giving properties, the cows may be considered in ratio of four cows to one buffalo in Central Gujarat and two in the South Gujarat. On this basis the average number of persons per one milk-giving animal is 8·2, 5·9, 4·7 and 3·9 in Central Gujarat, South Gujarat, Kathiawad and North Gujarat divisions respectively. According to above computation of the number of milch cattle and taking an average supply of 4½

Division	Cows and buffaloes	Population	Proportion of persons per each head of milch cattle
Central Gujarat ..	106,692	707,512	6·6
South Gujarat ..	84,098	340,372	4·0
North Gujarat ..	273,963	900,578	3·3
Kathiawad	47,350	178,060	3·8
Total ..	512,094	2,126,522	4·1

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seers of milk per day per each head of cattle, one person in the different divisions gets per day milk as shown below :—

Division	Population	Daily supply of milk in the State	Average seers of milk per individual
Central Gujarat ..	707,512	387,459	0·54
South Gujarat ..	340,372	256,954	0·75
North Gujarat ..	900,578	858,600	0·95
Kathiawad	178,630	189,400	1·06

The only object in presenting these statistics is for purposes of comparison with different divisions. If these figures reveal any sufficiency of nourishment, it ought to be gauged from the healthiness of the agriculturists of those divisions. These statistics show that the inhabitants of the Central, Southern, Northern and Kathiawad divisions are in an ascending order of healthiness. Thus the population of Central Gujarat is the weakest. On the other hand, the scarcity of milk must be in a reverse order. How far do these statistics confirm the exact state of things is left to the reader to think for himself. If he finds the situation deplorable, he should strive to improve it.

13. **Conclusion.**—This being the first regular cattle census, its statistics are neither of much use for purposes of comparison nor of help for gauging the real condition of agricultural cattle in the State. The Census will be invaluable both to the Government and the subjects as an index of the real condition of cattle if the principle of a quinquennial census is accepted as recommended above.

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